RFP2000001481

APPENDIX C

Fairfax County, Virginia

TECHNICAL REQUIREMENTS

NG9-1-1 IP Telephony Platform

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1.0 PURPOSE OF REQUEST FOR PROPOSAL (RFP)

The Fairfax County Department of Public Safety Communications (DPSC) invites responders with documented expertise and experience in public safety communications to submit proposals for a cost-effective equipment and services solution to design, furnish, install, test, and maintain a Next Generation 9-1-1 (NG9-1-1) telephone system in its dispatch center that shall possess the highest degree of resiliency, reliability, redundancy, and service availability. The system shall support the delivery of 911 calls[1] to the DPSC as the primary Fairfax County PSAP and include replacement of the stand-alone call processing platforms in use today in the secondary PSAPs of the Town of Vienna, the Town of Herndon, and City of Fairfax. The system shall be IP based and compliant with National Emergency Number Association (NENA) i3 standards. This RFP requires interfacing to the existing Verizon Selective Router network. Geo-spatial routing is not within scope of this RFP however, the responder supplied solution should comprise all the necessary functions that will allow a straightforward transition and implementation of geo-spatial routing in a subsequent procurement.

Definitions for this RFP are in Attachment 1 and Acronyms are in Attachment 2.

Although the initial deployment shall support call payloads comprising voice calls and text messages, it is the objective of Fairfax County to procure a system that shall comply with evolving national standards, and that shall offer the functionality to support Next Generation 911 capabilities, including without limitation, the delivery, receipt, and display of videos, and/or photographs in the future.

Therefore, Responders shall respond with proposals for a system that either currently supports, or will support in the future, such Next Generation 911 call payloads as are generally accepted within the emergency services community.

Responses to this RFP must provide a complete solution covering all of the mandatory requirements. **Fairfax County is not interested in independently procuring functions from different responders and integrating them into a solution.**

The complexity and open standard nature of NG 9-1-1 systems suggests that partnering of firms may be required to meet all requirements. In this case, a single firm must fulfill the role of prime responder (listing any subcontractor in RFP Special Provisions, Appendix B,) thereby assuming responsibility for the entire solution and serving as the single contracting entity and single point of contact.

Non-performance or delay in performance by the service provider may result in disruption in delivery of services, and, therefore, time is of the essence in performance dates, deadlines, and delivery dates.

Fairfax County Department of Purchasing and Supply Management reserves the right to award based on technical merit, not lowest price.

[1] The term “call” or “payload call” is used in this document to indicate any real-time communication – whether voice, text, or video, telematics – between a person needing assistance and a PSAP call taker.

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Based on Fairfax County evaluation of proposals, the County may enter into negotiations with one or more qualified Responder(s).

2.0 CURRENT ENVIRONMENT SUMMARY

Fairfax County's current local emergency call taking environment is in need of replacement due to end-of-life system constraints and includes:

2.1 **McConnell Public Safety Transportation Operations Center (MPSTOC).**

The table below summarizes the telephony configuration by function/position at MPSTOC.

Function/Position	Equipment	Quantity	Covered by back up
Call taking	Vesta	36	Y
Admin (TSM01)	Vesta	1	N
Wrecker/Service Desk(SD01, SD02)	Vesta	2	Y
DPSC Supervisor	Vesta	2	Y
Multi-purpose console (RLF 01, RLF02)	Vesta	2	y
Police Liaison Commander	Vesta	1	Y
PSUP	Vesta	1	Y
Tow	Vesta	2	Y
Training Academy	Vesta	11	Y
Fire Dispatch	Xtend	12	Y
Supervisor's offices	Phone only	8	Y
Supervisor's bridge	Phone only	2	Y
PLC Office	Phone only	3	Y
UFO Office	Phone only	3	Y
Police dispatch	Phone only	12	Y
IT gallery	Phone only	3	N
Teletype	Phone only	6	y
Algo PBX alarm	Phone only	2	N
Fire Dispatch administration (Xtend)	PC only	1	N
Vesta administrative PCs (includes (2) PBX support PCs)	PC only	12	N

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2.2 **Alternate 9-1-1 Public Safety Communications Center at Pine Ridge (APSCC).**

The table below describes the operations floor configuration at the Pine Ridge Alternate Center:

Function/Position	Equipment	Quantity	Covered by back up
Call Taking (CT 1-14)	Vesta	14	N
Wrecker/Service Desk (ASD01)	Vesta	1	N
DPSC Supervisor (AFD00, APD00)	Vesta	2	N
Multi-purpose console (APD01, APD02)	Vesta	2	N
Multi-purpose console (AFD05)	Vesta & Fire dispatch Phone only	1 each	N
Police Liaison commander (APLC0)	Vesta	1	N
Fire dispatch	Phone only	4	N
Uniformed Fire Officer	Phone only	1	N
Police dispatch	Phone only	5	N
Teletype console	Phone only	2	N
CAD office	Phone only	6	N
Supervisor's bridge	Phone only	1	N
IT gallery	Phone only	2	N
Vesta Administration (IT gallery, Supervisor's bridge)	PC only	2	N

An overview of the MPSTOC CAMA trunks and operations floor positions is shown in Figure 1. A diagram of the MPSTOC Operations Floor is shown in Attachment 3. A diagram of the Pine Ridge (APSCC) Operations Floor is shown as Attachment 4.

PSAPs Configuration Overview for CPE Replacement

	Primary PSAPs*	Total CAMA Trunks	Wireline CAMA Trunks	Wireless CAMA Trunks	VOIP CAMA Trunks	Direct Line PD (Ring Down)	Direct Line FD (Ring Down)	10 Digit in-bound PRI	10 Digit in-bound SIP	10 Digit Out-bound POTS	Outbound PRI Channels	Outbound SIP	9-1-1 Call Taking Vesta Positions	Fire Dispatch (Only) XTEND Positions	Police Dispatch (Phone Only) Positions	Supervisor Non-Vesta Phone Positions
V A	Fairfax County - PSTOC (Primary)	28	10	14	4	25	61	78	N/A	14	16	N/A	58	12	12	6
	Fairfax County - Pine Ridge (Backup/Alternate)	28	10	14	4	N/A	N/A	N/A	93	16	N/A	16	21	5	5	2

* - Primary PSAP is defined as a PSAP to which 9-1-1 calls are routed directly from a 9-1-1 Control Office such as a Selective Router or Tandem.

	Secondary PSAPs*	Total CAMA Trunks	Wireline CAMA Trunks	Wireless CAMA Trunks	VOIP CAMA Trunks	Direct Line PD	Direct Line FD	N/A	N/A	10 Digit Out-bound POTS	N/A	N/A	9-1-1 Call Taking Vesta Positions	Fire Dispatch (Phone Only) Positions	Police Dispatch (Phone Only) Positions	Supervisor Phone Only Positions
V A	Fairfax County															
	Fairfax City	4	4	-	-	5	-	-	-	8	-	-	2	-	2	3
	Town of Herndon	4	4	-	-	1	-	-	-	4	-	-	2	-	2	3
	Town of Vienna	4	4	-	-	1	-	-	-	9	-	-	2	-	2	1

* A secondary PSAP is defined as a PSAP to which 9-1-1 calls are transferred from a primary PSAP.

Location	Other Notes
Fairfax	CT01-CT36, TOW1 TOW2, RLF1, RLF2, CT00, OP00, Academy 11 seats, TCM1, PSUP, PLC1, SD01, SD02 = 58 positions
Fairfax	Fairfax currently uses AMCOM XTEND software for phone interface at fire dispatch positions. Would like to consolidate to one telephony platform.

Figure 1 – Fairfax County and Secondary PSAPs Configuration Overview

2.3 **Telephony Environment**

a. Fairfax County 9-1-1 is served by one telephone Company which is Verizon. The Current Enhanced 9-1-1 Telephony System at MPSTOC is Vesta 2.0, Service Pack 4 while at the Alternate Center at Pine Ridge the Telephony System is Vesta 2.2, Service Pack 5, and both implementations are supported under contract with Verizon. The Vesta systems are not networked together.

b. Each secondary PSAP is currently supported by a stand-alone Vesta Pallas system for call processing under maintenance agreements with Verizon.

c. Figure 1 shows the quantity of incoming CAMA trunks at MPSTOC and at the Alternate Center at Pine Ridge for Fairfax County. An Avaya CS1000 PBX, located at each facility supports incoming and outgoing calls for 9-1-1 functions. Inbound Ten digit number traffic arrives at MPSTOC across dedicated PRI circuits while at Pine Ridge incoming ten digit numbers arrive via SIP circuits.

d. Current Environment - MPSTOC: the primary 9-1-1 Center :

1. The DPSC currently receives 9-1-1 calls over 28 CAMA trunks from the Verizon Selective Router network (Fairfax and Centreville are the local serving central offices for MPSTOC, and Fairfax and Alexandria are the locations for the Tandem Selective Router switches). See Attachment 5 for a listing of the 911 trunks at MPSTOC. There are an additional two CAMA trunks at MPSTOC that are used for training purposes only. In addition, DPSC receives other public safety related calls to ten digit numbers over four dedicated PRI circuits. Both the 9-1-1 CAMA trunk calls and the ten digit number PRI calls terminate onto an Avaya CS1000 PBX dedicated primarily to 9-1-1 operations. A separate agency, the Virginia Department of Transportation (VDOT) is co-located on the operations floor and utilizes some of the 9-1-1 PBX capacity to support its regional operations. Also, the Virginia State Police (VSP) is co-located on the operations floor and utilizes the 9-1-1 PBX as a backup resource. For the purposes of this RFP, VDOT and VSP will remain on the existing 9-1-1 PBX and any responder solutions with planned impacts on the 9-1-1 PBX must be avoided so as to not interfere with day-to-day VDOT and VSP operations.
2. The incoming emergency and non-emergency calls are directed to call taker workstations over a “closed” Vesta network from the PBX using industry standard TDM protocols. Other incoming administrative calls go to supervisor and teletype positions situated on the operations floor. Attachment 6 lists the MPSTOC positions and their functional use.
3. A training academy exists at MPSTOC and details of its configuration are shown in Attachment 7.
4. An implementation of Text-to-9-1-1 is beginning using an enhanced web browser approach with a provider hosted system. The enhanced web browser approach provides a capability for receipt of text-to-9-1-1 messages at every call taker workstation and also provides an ability to perform, using multiple formats, “warm” transfers of Text-to-9-1-1 sessions to adjoining jurisdictions in a coordinated fashion, which is an important feature in the National Capital Region.

5. DPSC currently has an on-site backup plan at MPSTOC where the 9-1-1 CAMA trunks are "made busy" in the Verizon network using Network Control Modems that direct the 9-1-1 calls to NCM activated ten digit numbers. A switch redirect service is then used to move the NCM ten digit numbers to an onsite backup capability which is the MPSTOC building administrative switch, an Avaya CS1000 PBX. The call takers answer the calls using Nortel 3905 phone sets which do not provide ANI/ALI information for the calls (having ANI/ALI information is a must for any backup solution the respondent offers).
6. Each call taker, dispatcher, teletype operator, and supervisor position has a separate stand-alone Windows based PC with Internet access that is provided over a Fairfax County managed MPLS Mesh network using BGP (Border Gateway Protocol) protocols. The internet access is available over the mesh network through a Fiber Optic Ethernet handoff at a building demarc point using two vendors and a total of three circuits. A dark fiber optic link exists between the MPSTOC facility and the Alternate facility at Pine Ridge.

e. Pine Ridge- the Alternate Center:

1. The Alternate Center is provisioned with 28 trunks (similar to MPSTOC in capacity). See Attachment 8 for a listing of the 911 trunks at the Alternate Center at Pine Ridge located on Woodburn Road in Annandale, Va. There are a total of eight T1 circuits supporting the ten digit calls and the T1 circuits are provisioned from Verizon Business Services (four from the Fairfax County Government Center and four from Woodburn Road). The T1 circuits terminate to a Session Border Control Function/Router at Pine Ridge and are converted to the SIP protocol. A separate Avaya CS 1000 at Pine Ridge distributes the SIP calls to IP phones located at Vesta workstation (1140E) and the calls are answered using the Vesta workstation. There is no additional on-site backup phone function to the Vesta environment at Pine Ridge. The CAMA trunks at Pine Ridge are serviced out of the Verizon Braddock Road and Merrifield Verizon central offices.
2. Internet access at Pine Ridge is not available at every workstation but is available at only a handful of locations on the Operations floor.

f. The Fairfax County Secondary PSAPs have standalone Vesta systems (Vesta Pallas) at their locations and they have separately provisioned CAMA trunks that allow them to receive ANI/ALI.

g. At MPSTOC, another level of backup capability exists through a rooftop satellite that is connected to the E9-1-1 PBX where a pre-defined 800 number is available for use in emergency situations. The 800 number provides an incoming capability for calls to MPSTOC that does not rely on the local Verizon CO environment for the last mile connection. Calls to the 800 number terminate at call taker workstations through Vesta and are identified as a line type Satellite. Outbound calls are also enabled through the satellite facility.

e. The administrative telephone service for DPSC operations at MPSTOC is provided via connection to the E911 Avaya CS1000 PBX.

f. The GIS mapping is currently incorporated only into the CAD mapping system. There is currently no mapped ALI.

g. The current CAD system is provided by Integraph – Version 9.1

h. The current logging recorder is provided by Verint with separate physical implementations of the Verint systems at MPSTOC and Pine Ridge. The MPSTOC Digital Voice Recording System consists of a networked system of Audiolog Version 5.0 digital voice loggers running on Audiolog 3000 Series Chassis, all manufactured by Verint Systems. This networked system of voice loggers were installed in December 2008. The solution includes a Centralized Archive Storage System and integration to the Intergraph CAD system.

i. The APSCC (Pine Ridge) Digital Voice Recording System consists of a networked system of Audiolog Version 4.0 digital voice loggers on an Audiolog Ultra Platform, all manufactured by Verint Systems. The solution also includes local Centralized Archive Storage System. This solution was installed in October 2004.

e. The radio console is provided by Motorola - MCC5500.

1. The county operates two voice radio 800 MHz trunked radio systems, one dedicated for public safety emergency response operations with over 6,000 units, and the other that supports more than 3,000 radios for Fairfax County Public Schools Transportation (school buses), and county agencies including the Department of Public Works and Environmental Services, Park Authority, FASTRAN, the CONNECTOR bus system, and other non-public safety county agencies. Public Safety and Public Service, are architected to allow interconnection, as well as back-up capability for each other.
2. The FCC mandated 800 MHz re-banding effort has been completed. County staff not only managed the county's systems transition, but also served as the Regional Coordinator for the entire National Capitol Region's re-banding effort to assure that regional interoperability was maintained.

Recent representative annual incoming call volumes for Fairfax County are shown in Attachment 9.

3.0 RESPONSE CONTENT AND REQUIREMENTS

Fairfax County requests concise and detailed responses and is not interested in just brochures or "boilerplate" information. The use of organized and clutter free diagrams, pictures and other aids are encouraged. Each requirement must be fully responded to within the section stating the requirements which are listed in Section 6 of these Technical Requirements. A soft copy of the requirements compliance matrix is provided to facilitate response to the requirements, and can be found at http://www.fairfaxcounty.gov/solicitation top of page, Section titled "**Electronic Attachments for Solicitations listed below"** (above current solicitations).

3.1 Technical Proposal Structure

The technical proposal must follow this structure:

Cover Letter—A one-page cover letter signed by an authorized representative of the Responder, must be submitted containing the name and address of the corporation or business submitting the proposal and the name, address, telephone number, email address and title of the person authorized to represent the Responder.

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Fairfax County IT Consultant/Contractor form: The Fairfax County DEPARTMENT OF INFORMATION TECHNOLOGY IT Services Provider CONSULTANT/CONTRACTOR AGREEMENT signed by an authorized representative of the Responder.

Executive Summary—The Responder must provide a general overview of their solution to this RFP including a phased Migration Strategy. Distinctive features of the proposed system should also be presented.

Responder Qualifications - The respondent should provide a summation of their capabilities within the last five years as it relates to systems engineering, planning, and successful implementations of an IP Based NG9-1-1 Communications System. Describe the organization and composition of the responder team that will support and operate the proposed solution based on the below enumerated requirements including sub-responders and their roles and responsibilities. In addition, the respondent should include any activities in the past 12 months that their company has taken to advance the capabilities of 9-1-1 pertaining to new and industry leading technology—such as wireless and VoIP— and their relationship of those activities to traditional 9-1-1 systems. Respondents should provide a list of current customers, especially noting statewide deployments around the U.S. as well as any deployments to other PSAPs for IP Based NG9-1-1 Communications Systems and a description of what services are being provided to each customer. Respondents should include a brief history of their company's involvement in the public safety industry and how that qualifies them to participate in Fairfax County's 9-1-1 project.

RFP Response— The RFP response should include considerations for the phased implementation/migration at Fairfax County primary and alternate sites as well as implementation at all Fairfax County secondary PSAPs.

Project Plan

A project plan for the phased approach should be included.

It is Fairfax County's expectation that the process includes a project plan which addresses best practice subjects; e.g. scope, time, testing, communications, risks.

Using elapsed time from contract execution the Respondent must provide a project schedule based on experience with projects of similar size.

Within 30 days of contract execution a draft project plan with specific dates must be provided to Fairfax County for review.

Information provided by the Responder in the Acceptance Testing, Migration and Training sections shall be integrated into the project plan.

Phased Approach

Fairfax County envisions a phased approach and respondents must provide a plan and approach to ensure a smooth migration to the new solution with no loss of current functionality or the ability to process emergency and non-emergency calls.

Phase 1 - New NG9-1-1 Telephony Platform at MPSTOC installed and also at Alternate Center Pine Ridge with connections made to a Legacy Selective Router Gateway Interface to existing Verizon 9-1-1 TDM Network (CAMA trunks). Also as a part of Phase 1, the implementation of a new backup phone capability at MPSTOC and Pine Ridge that is easily switched to and provides ANI/ALI capabilities at both locations is desired.

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Phase 2 - Implementation of the NG9-1-1 Telephony platform at secondary PSAP locations (Town of Herndon, Town of Vienna, City of Fairfax) with interface to existing Verizon 9-1-1 TDM Network (CAMA Trunks). The responder shall propose a sequence of order for migrating secondary PSAPs to the new solution based on a least risk approach but such sequence will be mutually agreed upon with the County of Fairfax.

Responses shall address, at a minimum, the following:

1) Implementation of a NG9-1-1 Telephony Platform to support emergency call processing and DPSC administrative/supervisor telephone functions at the primary and alternate DPSC locations
2) Onsite backup system with ANI/ALI capabilities at MPSTOC, Pine Ridge, and secondary PSAPs for emergency call processing and DPSC operations floor 9-1-1 administrative/supervisor telephone functions
3) Replacement of existing separate telephony system used for fire dispatchers at MPSTOC with the responder proposed NG9-1-1 Telephony platform
4) Approach to a phased cutover and transition/migration of existing and future equipment to minimize operations at MPSTOC, Pine Ridge, DPSC Training Academy, and secondary PSAPs supported by Fairfax County (Town of Herndon, Town of Vienna, City of Fairfax)
5) Applications and appliances, including connecting devices, routers, firewalls, and other components required to transmit call payloads from the border control function through the i3 functional elements to the appropriate PSAP;
6) Devices capable of recording call payload information as delivered to the ESInet and NG9-1-1 Telephony platform and workstations;
7) Integration plans for applications and appliances, including design components and certification of i3 compliance;
8) The services of a help desk, NOC, and system failure resolution; Installation, testing, and acceptance processes;
9) Ongoing maintenance support of the system;
10) Project management for the installation, testing, and certification of the system; and
11) Warranty and maintenance.
12) In order to meet the hard deadline of February 1, 2016, extensive upfront solution, network and failover testing, in addition to upfront process development, is required to ensure that the deployment phase of the project runs seamlessly with all the issues being brought to light during the design and testing phases.

13) The migration to the NG9-1-1 Telephony Platform shall be on a rolling basis**.** The project schedule and any changes thereto, including the sequencing of the installation at the secondary PSAPs, shall be subject to the approval of the Fairfax County. Since the migration to the new service will be conducted in stages, the response shall set forth the bidder's plans regarding the support of a phased migration, rolling staged cutover, and parallel operation and provision of gateways to legacy systems and networks.
14) Responders are encouraged to use their knowledge and products to respond with the system that provides best value for Fairfax County.
15) Responders shall supply a response that fully describes in detail their overall effort. Responders shall describe in detail all system needs and requirements to support and implement the system to be delivered by the responder
16) The system shall be expandable. Such expansion shall be on an incremental basis, not a wholesale replacement of major platform(s). The responder shall certify that subsequent system expansions or upgrades will be backward compatible with components proposed herein. Responders shall describe the scalability and expandability, indicating the related costs of the system in terms of its various components.

Appendices/Attachments—The Responder may attach appendices/attachments and reference them from within the proposal response. This is particularly appropriate for lengthy responses on a single subject. Understanding the intent of the Responder should be possible without the reading of the attachments.

Brochures—Hardware, software, or service brochures may be attached where they are appropriate.

3.2 Pricing

Clearly describe your pricing structure and anticipated costs to Fairfax County, on a yearly basis, for your comprehensive solution in the context of a transition from the existing legacy environment to a transitional (pre geo-spatial routing) NENA i3 solution architecture. Figure 3 depicts the Scenarios which require itemized costs. Costs associated with project phases and equipment for secondary PSAPs of Fairfax County (Town of Herndon, Town of Vienna, and City of Fairfax) should be enumerated separately. Yearly maintenance costs are also to be enumerated separately for secondary PSAPs as well as MPSTOC and Pine Ridge. The requirements in this RFP ask responders to indicate if the stated requirement is in their base provided solution (using response codes as defined in Section 6 of the Compliance Matrix such as MR for Meets Requirements, or MM where minor customizations of the responder's solution is necessary, etc.). Fairfax County desires that price proposals clearly define the total system cost using the Response Codes of Section 6 of the Compliance Matrix as a guide. The intent is to allow Fairfax County to identify the cost for the responder's system if just the 'MR' requirements are purchased, and then the additional cost for the 'MM' requirements, and so forth. The proposal should clearly identify the costs along these tiers. Price proposals for UD- (under development) are not required to be provided but can be provided at the responder's option. Individual system components should also be priced to allow future enhancements as required as well as allowing other PSAPs to utilize the provided solution.

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Scenario	Description	Tier 1 Support	Tier 2 Support
A	Phase 1 - New CPE at MPSTOC, Pine Ridge, & DPSC Academy	Fairfax County	Responder
B	Phase 1 - New CPE at MPSTOC, Pine Ridge, & DPSC Academy	Responder	Responder
C	Phase 2a – New CPE at Town of Vienna	Responder	Responder
D	Phase 2b – New CPE at Town of Herndon	Responder	Responder
E	Phase 2c – New CPE at City of Fairfax	Responder	Responder

Figure 3 – Itemized Cost Requirements

- Scenario A

  Fairfax County owns the systems and software licenses which provide i3 functions. Fairfax County provides Tier 1 support for the systems at MPSTOC and Pine Ridge with a training period of a responder support engineer to assist and train Fairfax County staff to provide Tier 1 support.

  Pricing must include having one full time equivalent fully qualified Tier 1 support engineer onsite at MPSTOC for a period of three months after system installation. The on-site training support at MPSTOC shall be renewable in one month increments as an option after the initial three month period. This engineer will transfer knowledge to Fairfax County staff necessary for providing Tier 1 self-support. To avoid any doubt, this is a requirement for a contract individual to be assigned for the entire period and any time off exceeding 2 work days is to be covered with an equally qualified engineer.

  Tier 2 support is provided by the Responder. This support must include onsite support when required. The support contract must be priced on an annually renewable basis. The Respondent is encouraged to provide optional terms (in the separate options document) which provide more favorable prices.

- Scenario B, C, D and E

  Fairfax County owns the systems and software licenses which provide i3 functions. Tier 1 and Tier 2 support is provided by the Responder. The secondary PSAPs Tier 1 support is to be provided by the Responder and not by Fairfax County staff. The support contract must be priced on an annually renewable basis. The Respondent is encouraged to provide optional terms (in the separate options document) which provide more favorable prices.

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4.0 BACKGROUND: FAIRFAX COUNTY OVERVIEW

Fairfax County, Virginia is located in the northeast corner of Virginia and has an area of approximately 400 square miles with approximately 340,000 land parcels, and a population in excess of 1,111,000 people. Fairfax County is part of the Washington-Baltimore Consolidated Metropolitan Statistical Area (CMSA).

The Fairfax County Government is organized under the Urban County Executive form of government (as defined under Virginia law). The governing body of the County is the Board of Supervisors, which makes policies for the administration of the County. The Board of Supervisors is comprised of ten members: the Chairman, elected at large, and one member from each of nine supervisor districts, elected to a four year term by the voters of the district in which the member resides. The Board of Supervisors appoints a County Executive to act as the administrative head of the County. The County Executive carries out the Board's policies, directs business and administrative procedures, and recommends officers and personnel to be appointed by the Board of Supervisors.

Agency Descriptions: The Fairfax County Department of Public Safety Communications (DPSC) which is the primary Public Safety Answering Point (PSAP) for Fairfax County is the lead agency for this project and will be provided support by the Fairfax County Department of Information Technology (DIT). In addition, the requirements outlined herein potentially provide the basis for other Metropolitan Washington D. C. Council of Governments (MWCOG) PSAPs to procure equipment and services to allow each MWCOG PSAP to support PSAP calls that originate within their respective jurisdictional boundaries.

4.1 Department of Public Safety Communications

The Fairfax County Department of Public Safety Communications (DPSC) serves as the primary telecommunications 9-1-1 Public Safety Answering Point (PSAP) and provides dispatch operations for the delivery of all Fire and Rescue and Police services to the citizens of Fairfax County. The Director of DPSC reports to the Deputy County Executive (DCE) for Public Safety. The DPSC is located in the McConnell Public Safety Transportation Operations Center (MPSTOC) in Fairfax, VA and is staffed by approximately 160 operations personnel who are responsible for answering calls, collecting pertinent event information, and processing all 9-1-1, emergency and non-emergency requests for Fire and Rescue Services and Fairfax County Police Stations. This entire process is supported through the use of the Computer-Aided Dispatch (CAD) system with mobile computer terminals in responding vehicles, the public safety radio communication system, and the E-911 telephone system. DPSC also has an alternate backup facility in Annandale, Virginia, that is geographically dispersed within the Verizon legacy Selective Router network through separate CAMA trunking into the alternate center. The alternate center is equipped with a separate Avaya CS1000 PBX and Vesta workstation deployment although with fewer workstations than are available at MPSTOC.

The DPSC utilizes a single-tier call processing model in which Public Safety Communicators (PSCs) answer all police, fire, and emergency medical services calls. The PSC then forwards the call for service via CAD to either a DPSC police or fire dispatcher co-located on the same operations floor.

The DPSC provides required command, control, communications, and information support to over 3,000 County public safety field personnel to ensure safe and effective conduct of their activities 24 hours a day, 365 days a year. The DPSC receives records, classifies, and processes emergency and non-emergency public safety calls by dispatching law enforcement, animal control, fire suppression, or emergency medical services. Subsequent to the initial dispatch, the center provides communications support and notification services throughout the event until resolution of the situation. These activities are supported by public safety telephone, radio, and CAD systems.

4.2 Department of Information Technology

In Fairfax County the Department of Information Technology (DIT) provides the full range of technology services on an enterprise-wide infrastructure, architecture framework and standards for most systems. County agencies have a limited number of technology staff that may directly support agency business specific point solutions or industrial systems (although many of these are beginning to be incorporated on the enterprise network), and provide localized desk-top user support. The IT staff of County agencies staff matrix to DIT for direction and assistance in implementing their agency specific business systems. The county's Chief Technology Officer is the Director of the county's Department of Information Technology.

The chief executive for Fairfax County government is the County Executive (CEX). The CEX has four deputy County Executives and staff who assist with the management of the 50 plus departments/agencies. The Department of Information Technology (DIT) reports to one of the four Deputy County Executives (DCE) who has responsibility for a set of departments and staff functions that either directly or indirectly participates in the overall direction of innovation and enterprise information policy, as well of other county-wide operational support agencies.

The County's Enterprise Network is the main data backbone with the central hub in the County Data Center serving all County agencies. The enterprise network serves over 16,000 devices in more than 300 locations, and consists of the County's private fiber network (referred to as the I-Net) and commercial carrier network connectivity to certain small and/or leased locations. TCP/IP is the standard network protocol and OSPF and BGP are the standard routing protocols employed by Fairfax County. In the local area network (LAN) environment the standard desktop speed is 100MBPS and the standard network backbone in a campus environment is Gigabit Ethernet over fiber. Remote sites are connected with varying levels of service depending on requirements. The majority of the County's sites are served on a private fiber Institutional Network (I-Net). The I-Net is a Metropolitan Area Network (MAN) employing a 10 Gigabit Dense Wave Division Multiplexing (DWDM) backbone circling the county and one Gigabit uplinks to 192 County sites including all Police and Fire stations and the Public Libraries. Multi-Protocol Label Switching (MPLS) is employed on the I-Net to allow the County to provide multiple local networks for services such as Telephony.

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The I-Net is also a part of a National Capital Region Interoperability Communications Infrastructure (ICS) through a regional network called NCRnet. Twenty one local jurisdictions in Virginia, Maryland, and the District of Columbia are interconnected through the NCRnet MPLS infrastructure. Future plans for NG9-1-1 geo-spatial call routing for Fairfax County and the region will consider appropriate use of the NCRnet as one of several platforms available for NG9-1-1 applications. A schematic of the existing links among jurisdictions is shown in Figure 4.

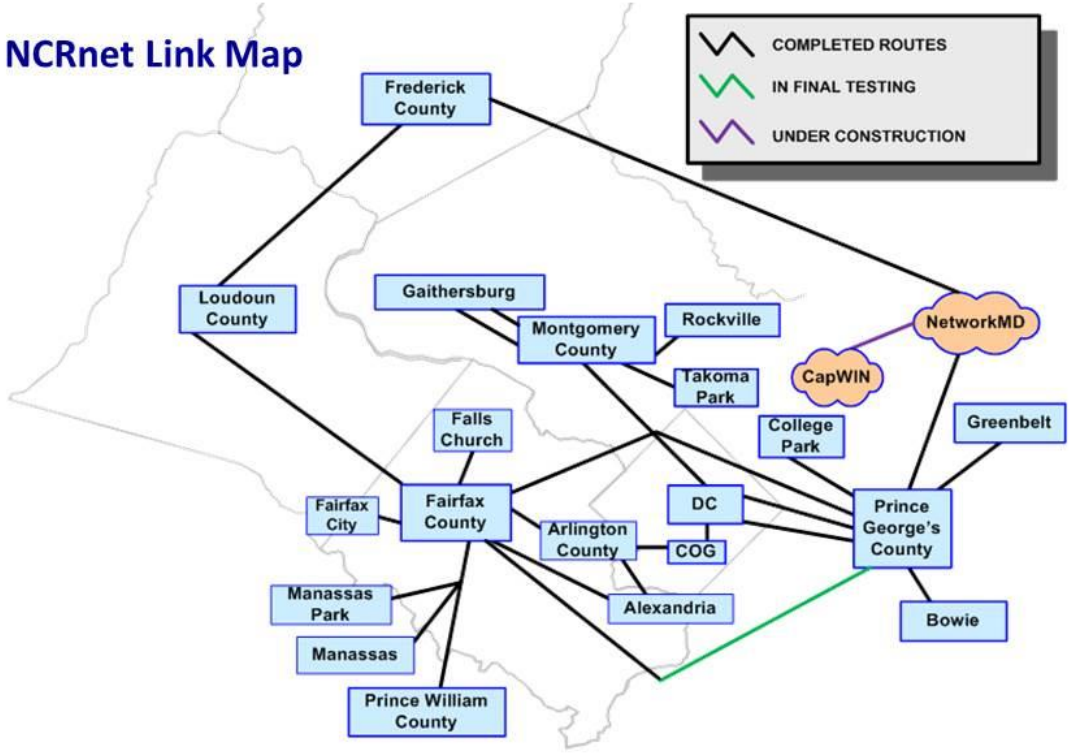

Figure 4 NCRnet Link Map

APPENDIX C

5.0 TECHNICAL AND FUNCTIONAL SYSTEM REQUIREMENTS

The technical and functional requirements are defined in the requirements compliance matrix which follows. Respondents must provide an overview of their proposed solution which demonstrates that it meets the overall scope of service and project goals documented in this RFP. Responders shall provide a solution that provides software, equipment and/or services that meet, are capable of meeting, and/or that will meet NENA NG9-1-1 requirements and standards now available, or as they become available in the future.

Response Code	Definition
MR: Meets Requirement	The requirement will be met by the core functionality of the system proposed without qualification, addition or change. This function is operational at other sites.
MM: Minor Modification	Requirement will be met with minor modifications to existing software. All work will be performed by the responder. This work must be detailed on the Price Proposal. Any impact on project implementation and/or testing must be noted in the implementation and/or testing plans.
MC: Major Customization	Requirement will be met by major modifications to existing software or by new custom software development. All work will be performed by the responder. This work must be detailed in the Price Proposal. Any impact on project implementation and/or testing must be noted in the implementation and/or testing plans.
UD: Under Development	Requirement will be met by software that is currently under development, in Beta test, or not yet released. Provide a target release date in the Comment section below. If in Beta test, indicate sites where Beta testing is being done.
NA: Not Available	Responder cannot meet requirement.

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5.1 NG9-1-1 Telephony Platform CPE General Requirements			
5.1.1	The proposed solution shall support deployment under a variety of architectures, ranging from single stand-alone PSAPs to multiple remote PSAPs served by a common geographically diversified platform.		
5.1.2	Bidder shall describe their experience in delivering such Telephony Platform systems in PSAPs similar in size and call volume to Fairfax County.		
5.1.3	The system shall provide both NG9-1-1 and multi-line administrative telephone system functionality. The system, at any one location, shall be sized to meet the requirements of 9-1-1 trunks and regular administrative telephony lines as shown in Figure 1 as well as the functional equivalent of the Direct Lines listed in Attachment 13.		
5.1.4	The system shall meet current needs as well as Next Generation 911/ESInet connectivity in order to meet anticipated future growth and changes to call payload. Therefore, the system shall be designed to have the ability to accept new call payload types without the need to replace the applications or appliances or CPE and the system shall be maintained in its entirety for the initial **contract duration (seven (7) years)** without the need to totally replace or totally upgrade the applications or appliances or CPE. The system architecture shall support all potential call payloads without changing out the core logic or hardware. The system shall be designed to be expandable, with the capability for expansion on an incremental basis, not a wholesale replacement of major platform(s). Responders shall state the expansion capability of the system equipment, describing the overall system capacities. The County fully intends to participate as part of a regional ESInet in the future and requires that the solution be compliant with consensus standards of industry associations, regulatory bodies, carriers and vendors. Immediate compliance with all new standards as soon as they are released is not expected but the Responder shall describe how the lag time between ratification of a new standard and compliance of the provided solution will be minimized.		
5.1.5	The responder will describe and demonstrate their ability to process a variety of different call formats including: • Traditional analog or digital telephone calls • Wireless calls in compliance with the FCC Phase 1 and Phase II mandate for full call integration • Voice over IP in native format • Text Message (SMS) • Photo messages • video messages • Telematics messages such as Automatic Crash Notifications (ACN) through services like OnStar		
5.1.6	The offered solution should allow the County to add NENA i3 functionality without wholesale replacement of hardware and software components as the NENA i3 core services of a regional solution are made available to the County. Minimally required components or capabilities of the baseline NG9-1-1 solution offered will include, but is not limited to:		

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	• ESInet (Emergency Service IP network) connectivity
	• Support for legacy originating services via gateways (e.g., access to traditional ALI databases, CAMA trunks)
	• Eventual Interface to Geospatial controlled IP software call routing function (ECRF and ESRP)
	• The ability to control call routing based upon a policy routing function (PRF) with standardized methods to define/build and control Policy Rules
	• Additional data acquisition after call delivery to facilitate call processing by call takers or other public safety entities
	• Support for intuitive and simple processes for transfer of calls with accumulated call takers notes and added data, or an access key to such data, to any authorized entity interconnected by ESInets
	• Ability to interconnect with other NG9-1-1 systems and to interwork with E9-1-1 systems
	• Support for system monitoring/logging/discrepancy reporting necessary to support troubleshooting (Logging should allow for the root cause analysis of why a system feature or capability did not function as designed. Example - logging should be of a sufficient level to show the exact reason for a call disconnect, reason for a failed transfer or conference of a call, why a call taking position became unresponsive, etc.) and ongoing operation and maintenance
	• The CPE shall be capable of supporting traffic to and from:
	  ○ Other entities directly on the ESInet;
	  ○ Legacy network gateways;
	  ○ Legacy PSAP gateways; and
	  ○ Other entities directly from their i3 networks.		

5.1.7	The system shall be capable of receiving 9-1-1 calls delivered via SIP using the NENA standard i3 protocol(s) as defined in NENA 08-003 v1 or the current approved NENA standard.		
5.1.8	The system shall provide both NG9-1-1 and multi-line administrative telephone functionality for call taking and dispatch positions for a PSAP. The number of NG9-1-1 call handling workstations and multi-line administrative telephone positions required are found in Figure 1.		
5.1.9	The proposed solution shall have open system architecture and have the ability to interface with other VoIP systems.		
5.1.10	The responder shall present a detailed architecture design for the system (as built), along with text description and annotated diagram(s). The descriptions and diagram(s) shall clearly identify interfaces and component functions. Responders shall identify the applications and appliances included in the system, together with any virtualization technologies utilized.		
5.1.11	The response shall describe in detail and shall provide specific examples and graphical depictions of the user interface and shall describe in detail the flexibility and functionality of the user interface. The County of Fairfax shall have the ability to customize the user interfaces according to skill set and functional roles. The user interface shall be selectable by skill set or functional based on user selection at time of login to the system. Once a logon choice is made, the user shall still have some capabilities to make adjustments on personal preferences such screen fonts,		

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	"button" placement, sizing of windows and the like. Such personal preferences should be able to be saved for use at the next login of the system.		
5.1.12	The proposed system shall be fully redundant for all major system components. Responders shall describe the system architecture with respect to the major components or modules, and describe how the system shall react to a failure of each major component or module. The response shall explain how the system meets the requirement to have no single points of failure.		
5.1.13	There shall be no system downtime that exceeds 50% capacity in the event of component failure. The System shall support a design that meets or exceeds 50% capacity survivability		
5.1.14	Support for E9-1-1 trunks shall be distributed over multiple gateways. These gateways shall be designed specifically for use in a Public Safety environment. Power supplies supporting the CAMA gateways shall be redundant and distributed.		
5.1.15	It shall not be necessary to power down the system in order to replace components. In addition, it shall be possible to remove redundant components that are in standby mode from the system without any interruption in service.		
5.1.16	Responders shall describe, in detail, the security protocols and interfaces of the system. If additional hardware (firewalls, etc.) is required, this shall be included in the base system, not priced as an option.		
5.1.17	The Offeror must provide their individual solution(s) and products configured in a manner that utilizes the latest NENA and Association of Public Safety Communications Officials (APCO) Next Generation E9-1-1 recommendations.		
5.1.18	All equipment must conform to Federal Communications Commission (FCC) Rules Part 15, Class A (commercial, non-residential radiation and conduction limits) for electromagnetic interference (EMI).		
5.1.19	Where applicable, all equipment must comply with applicable industry standards, such as: • Underwriters Laboratories (UL) • International Organization of Standards (ISO) • Open System Interconnection (OSI) • Institute of Electrical and Electronics Engineers (IEEE) • American National Standards Institute (ANSI) • Electronic Industries Alliance (EIA) • Telecommunications Industry Association (TIA), (including ANSI/EIA/TIA-568 Commercial Building Telecommunications Wiring Standards) • Equipment shall be compliant with NENA i3 standards.		
5.2 Call Delivery			
5.2.1 Call Queue Management			
Provide the capability to manage call queues for each tenant organization configured for the system and deliver the call to the call taker queue (call queue being defined as the distribution of incoming calls to available PSAP attendants in the order the calls are received or until an attendant becomes available).			

<table>
<tr><th colspan="4">Compliance Matrix</th></tr>
<tr><th>Req. No.</th><th>Requirement</th><th>Resp. Code</th><th>Page Described</th></tr>
<tr><td>5.2.1.1</td><td>Call queues (shall be displayed only to authorized system users) and the system shall support a minimum of 15 call queues for each PSAP/organization tenant configured for the system. Call queues are typically established by various skill sets (9-1-1, non-emergency, Tow-in, etc.). A list of the current queues in use at MPSTOC is found in Attachment 10. Each call taking and fire dispatch position require two DNs. Each police dispatch position currently has one DN. The system shall support incoming call Direct Inward Dial (DID) quantities for the MPSTOC and APSCC locations as reflected in the Direct Inward Dial Quantities table below. Admin PBX quantities are shown for background information as they are used in providing on-site 9-1-1 backup capabilities at MPSTOC currently.
<table>
<tr><th colspan="3">Direct Inward Dial (DID) Quantities</th></tr>
<tr><td>Location</td><td>DIDs Available at Location</td><td>DIDs in Use at Location</td></tr>
<tr><td>MPSTOC 9-1-1 PBX</td><td>200</td><td>63</td></tr>
<tr><td>MPSTOC Admin PBX</td><td>300</td><td>59</td></tr>
<tr><td>APSCC (Pine Ridge) PBX</td><td>59</td><td>41</td></tr>
</table></td><td></td><td></td></tr>
<tr><td>5.2.1.2</td><td>The system shall provide the capability to configure the call queue content, based on local policy rules.</td><td></td><td></td></tr>
<tr><td>5.2.1.3</td><td>The system shall provide the capability to intelligently monitor call queues and automatically take action based on local policy rules.</td><td></td><td></td></tr>
<tr><td>5.2.1.4</td><td>The system shall provide real-time updates to the call queue.</td><td></td><td></td></tr>
<tr><td>5.2.1.5</td><td>The system shall be capable of providing a dynamically updated, incident specific voice announcement to callers in queue based on policy rules.</td><td></td><td></td></tr>
<tr><td>5.2.1.6</td><td>The system shall display the time elapsed for each call in the queue.</td><td></td><td></td></tr>
<tr><td>5.2.1.7</td><td>The system shall display call queues by skill set group.</td><td></td><td></td></tr>
<tr><td>5.2.1.8</td><td>The system shall be capable of providing a visual warning when a call remains unanswered after a predefined number of seconds, as defined in local policy rules.</td><td></td><td></td></tr>
<tr><td>5.2.1.9</td><td>The system shall be capable of providing an audible warning when a call remains unanswered after a predefined number of seconds, as defined in local policy rules.</td><td></td><td></td></tr>
<tr><td>5.2.1.10</td><td>The system shall utilize location information delivered with the call and allow an automatic call distribution type of functionality to dynamically change call processing based on local policy rules.</td><td></td><td></td></tr>
<tr><td>5.2.1.11</td><td>The system shall support assignment of call takers to geographic zones that correspond to incoming location information of the call.</td><td></td><td></td></tr>
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Compliance Matrix			
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5.2.1.12	The system shall analyze geographic information and alert call takers when calls outside of a particular geographic area are presented.		
5.2.1.13	The system shall support assignment of calls by call takers skill sets based on an automatic call distribution type of function, based on the available call takers skill set.		
	Telephony Platform Message Capability		
5.2.1.14	The NG9-1-1 Telephony Platform shall provide an on-screen message window for the call taker which is always on-line.		
5.2.1.14.1	This message window shall allow the broadcast of a textual message to each call takers or a select group of call takers in the PSAP. The system shall also allow the recipient call-takers to automatically acknowledge that a message was read by a call taker.		
5.2.1.14.2	This function shall support pre-programmed messages (commonly used messages such as "Weather warning in effect - Heavy Rain"), and keyboard entry for one-of-a-kind messages.		
5.2.2 Call Distribution Rules			
Create automatic call distribution rules for Policy Based Routing of incoming requests.			
5.2.2.1	An automatic call distribution type of function group is a queue of calls/events defined by local policy rules such as call types, call data, call location and input from caller, providing skill-based call routing to a defined group of call takers. The system shall support Automatic Call Distribution (ACD) by various County defined skill sets (e.g., 9-1-1 only, Non-emergency, Tow-in, Text-to-9-1-1, Alarms and so forth). See Attachment 10 for the current skill routing matrix. ACD allows for inbound call traffic to be grouped, with calls presented to specific call takers based on distribution algorithms (for example longest idle call takers).		
5.2.2.2	The system shall provide the capability to create a minimum of 15groups with an automatic call distribution type of function and display the groups on workstation screens in a user controlled sequence.		
5.2.2.3	The system shall support multiple groups with an automatic call distribution type of function and provide a minimum of at least 30 characters to display the name of the group. Describe the maximum length available.		
5.2.2.4	The system shall provide the capability to read, update, suspend, and delete groups with an automatic call distribution type of function.		
5.2.2.5	The system shall provide the capability to assign a call taker to a group or groups with an automatic call distribution type of function by call taker training level, skill, and experience level.		
5.2.2.6	The system shall provide the capability to assign multiple call takers to a group with an automatic call distribution type of function.		
5.2.2.7	The system shall provide the capability from a remote location to add call takers to a group with an automatic call distribution type of function.		
5.2.2.8	The system shall provide the capability to add call takers to a group with an automatic call distribution type of function who are not physically located in a PSAP.		
5.2.2.9	The system shall provide the capability from a remote location to delete call takers from a group with an automatic call distribution type of function.		

Compliance Matrix			
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5.2.2.10	The system shall provide the capability to restore groups with an automatic call distribution type of function.		
5.2.2.11	The system shall provide the capability to save groups with an automatic call distribution type of function.		
5.2.2.12	The system shall provide the capability to assign automatic call distribution type of function groups to a call distribution rule		
5.2.2.13	The system shall provide the capability to define automatic call distribution type of function rules based on resource availability, resource ability, group, event type, and direct number identification.		
.2.2.14	The system shall provide the capability to dynamically support all of the automatic call distribution type of function rules listed		
.2.2.15	A call taker will be considered eligible to receive a call if logged on and in a Ready state		
5.2.2.16	The ACD distribution shall support presentation of the distributed calls both with and without (configurable by ACD Queue) force-connect (call taker hears zip tone and is immediately connected to a caller when presented a call from the ACD Queue). The ACD distribution shall also support: • Multiple algorithms (Longest Idle, Fewest Calls, Round Robin) • Multiple Queues with rollover between Queues • Agent Priority • Line Priority • RAN (Recorded Announcement) • Wrap-up Time (with bypass option)		
5.2.2.17	When ACD is used, system shall also provide a large-format configurable display showing live ACD Queue activity including (for each ACD Queue) number of calls in the queue, longest wait time, and agent availability. The display shall also provide audible and visual alerts when configurable thresholds are reached and be configurable to display the queues in user defined sequence (e.g., priority order). The responder should describe what capabilities the provided system has to interface with existing audio visual systems at MPSTOC (SYMON/RMG Networks) or what standard interface configuration options are provided.		
5.2.2.18	A configurable Recorded Announcement (RAN) shall be supported on a per-ACD Queue basis and Line Type basis. The announcement audio will be interleaved with ring-back indication to the caller while that caller is in a ringing state. The ability to self route shall be included (e.g., an option to select a digit from a menu for different call processing routes). Use of RAN shall not delay call presentation.		
5.2.2.19	The system shall be equipped with a call control management module that provides Automatic Call Distribution (ACD-like) functions. The system shall be equipped with an IP-enabled call distribution function.		
5.2.2.20	Overflowed calls can be assigned a priority that affects visual presentation as well as placement in the subsequent ACD queue.		
5.2.2.21	Multiple tiers of overflow shall be supported.		

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5.2.2.22	The system shall support Ring-All call distribution groups. Ring-All call distribution allows for inbound call traffic to be grouped (ring group), with calls presented simultaneously to all call handling workstations that have membership in that group.		
5.2.2.23	Call takers have the option of answering the oldest unanswered call, or any other call out of sequence (for Fire dispatch positions).		
5.2.2.24	A configurable Recorded Announcement (RAN) shall be supported on a per-Ring Group basis. The announcement audio will be interleaved with ring-back indication to the caller while that caller is in a ringing state. Use of RAN shall not delay call presentation.		
5.2.2.25	The NG9-1-1 Telephony Platform shall provide full Computer-Telephony Integration, allowing call-takers to have on-screen access to telephone features.		
5.2.2.26	While Desktop workstations are required, the proposed solution must also support call handling via a remote device (such as, but not restricted to, a laptop or tablet).		
5.2.2.27	NG9-1-1 Telephony Platform - ALI Display		
5.2.2.27.1	The call handling workstation shall provide a configurable parsed ALI display which allows for configurable labeling of various fields. A raw (non-parsed) ALI view shall be supported as well.		
5.2.2.27.2	The CPE shall display legacy ALI in a standard form, as specified by the County of Fairfax, and shall be capable of exporting the legacy ASCII format out to the CAD interface port via serial and ultimately Ethernet. A sample of the current standard ALI screen is attached as Attachment 11. The responder shall provide an interface to an upgraded format at such time as an upgrade in location information (to Extensible Markup Language (XML) or otherwise) is published and approved for general use, as determined by the County of Fairfax.		
5.2.3 Use of Call Type Information			
Receive and validate call type information (e.g., vehicle telematics, silent alarm) from communications devices and recalculate call type and default priority based on supporting data.			
5.2.3.1	The system shall use call data to perform call treatment for machine to machine interactions such as envisioned with telematics providers (OnStar and alarm companies). The responder shall describe the capabilities of their proposed system to interface with external systems using NENA i3 standards.		
5.2.3.2	The system will be able to update the call detail record with all data that affects the call treatment, and shall include the pointer(s) (e.g., reference – URL) to the datasets that provided the additional information.		
5.2.4 Call Treatment Rules			
Route call from the initiator and call-originating service to the appropriate destination based on identified call treatment including location information received (civic or geographic/geodetic.) This capability is primarily seen as a future capability for Fairfax County when the Functional Elements of the ECRF and ESRP are implemented in a replacement capability to the current Verizon Selective Router network.			

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5.2.4.1	The responder shall describe how the implemented solution provides a logical, incremental migration to a NENA i3 Call Treatment and call routing capability. The responder's proposal should outline an approach where the system is initially installed with interfaces to the Verizon Selective Router network (where call treatment and call routing are handled through the existing legacy Selective Router database). In a subsequent procurement effort, Fairfax County and other regional jurisdictions will implement an i3 compliant replacement to the Verizon Selective Router network. The responder shall describe the how their system provides a migration capability to route calls based on:. 1) The system shall include an interface to an i3 compatible emergency call routing function that utilizes location information and policy rules to route emergency calls to the appropriate PSAP. The initial implementation of the responder's solution will utilize the legacy Selective Router network for receipt of calls yet this ECRF interface must be present in the proposed solution to allow Fairfax County to begin a phased implementation to an IP network where the ECRF services will be performed on a regional ESInet. Responders shall describe in detail the ECRF of the system and its relationship to other location-based call routing functions that may be offered by the bidder. Responders shall detail the protocols used by the ECRF and shall cite the standards that the ECRF meets, along with the minimum requirement for GIS data. 2) Emergency Service Routing Proxy (ESRP) - The system shall provide an emergency service routing proxy for call delivery to the appropriate PSAP based upon location and routing rules. Responders shall describe the system's use of the LoST protocol and how it interacts with the overall operation of the ESRP. Responders shall describe in detail the system's process for the functions related to the ESRP and shall indicate any outstanding issues that the system may have with this process (as it is specified in the NENA standards referenced in this document).		
5.2.4.2	The system shall be able to handle calls that involve error cases (e.g. garbled callback or no location data), based on policy rules.		
5.2.4.3	It shall be possible for PSAPs to accept additional media (e.g. images) from callers.		
5.2.4.4	The system shall be capable of multiple, pre-set failover scenarios.		
5.2.4.5	The system shall allow PSAPs to receive event notifications from authorized systems for display on the call taker message window.		
5.2.4.6	The system shall support emergency call routing from any entity capable of initiating an emergency call.		
5.2.4.7	The system shall permit a call, and all of the associated call data, to be "quarantined" if a computer virus or some other malicious code is detected by the system's security systems.		
5.2.4.8	The call taker must be permitted to communicate with a quarantined caller to determine if an actual emergency exists.		
5.2.5 Call Authentication			
The call authentication process ensures that the appropriate entity, such as the originating provider or other responsible party, has been granted permission to proceed (call treatment/processing) after call has accessed/entered the system.)			

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5.2.5.1	The system shall create a call detail record as the call enters the system.		
5.2.5.2	The system shall write the certificate authentication details (successful and failed) to the call detail record.		
5.2.5.3	The system shall be capable of displaying call detail record of an active call and displaying multiple active call detail records of calls being worked, based on local policy rules.		
5.2.5.4	The system shall certify / authenticate that the originating provider or other responsible party has been granted permission to deliver calls.		
5.2.5.5	The system of authenticating provider certificates shall be deployed with strong authentication capability consistent with NENA i3 standards.		
5.2.5.6	The system shall not accept calls from un-certified or unauthenticated providers. The originating provider or other responsible party shall generate a call refusal or error message for the user (e.g., voice recording) if the call is not successfully authenticated.		
5.2.5.7	The system shall generate an entry in a log when the call is successfully authenticated.		
5.3 Call Processing			
5.3.1 Call Answering			
5.3.1.1	The system shall provide the capability for a call taker to select a call from a call queue.		
5.3.1.2	The system shall permit an authorized call taker, as defined in local policy rules, to select any call from the queue.		
5.3.1.3	The system shall record the time when a call taker has selected a call.		
5.3.1.4	The system shall record and identify the call taker who selected the call.		
5.3.1.5	The system shall record when a call taker has selected a call out of queue order.		
5.3.1.6	The system shall permit the call taker to indicate a status of “Not Ready” for the situation where the user is signed-on (but not available to answer queue calls). – Based on local options include the ability to show not ready status to supervisor and other call takers.		
5.3.1.7	The system shall be configurable to automatically answer the call for the call taker.		
5.3.1.8	The system shall provide the capability to place a call on hold (two-way mute – audio specific). The system shall display a time on hold alert after predetermined number of seconds should display to the call taker placing it on hold and/or the appropriate supervisor, based on local policy rules.		
5.3.1.9	The system shall provide the capability for call taker to activate one-way mute for call.		
5.3.1.10	The system shall be capable of displaying call detail record of an active call and displaying multiple active call detail records of calls being worked, based on local policy rules.		
5.3.1.11	The system shall be configurable to specify the elapsed time before the “time on hold” alert will be generated.		
5.3.1.12	The system shall be configurable to deliver an audible and/or visual alert when the “time on hold” alert has been generated.		

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5.3.1.13	The system shall provide the capability to take a call off hold.		
5.3.1.14	The system shall record and log the time a call is placed on hold.		
5.3.1.15	The system shall record and log the time a call taken off hold.		
5.3.1.16	The system shall re-read and update the call detail record each and every time a call is taken off hold and provide a capability to display the call detail record for trouble shooting purposes.		
5.3.1.17	PSAPs shall have system provided TDD facilities to react to silent calls and be able to auto launch TDD when Baudot tones are recognized.		
5.3.1.18	The system shall be capable of terminating all communication links associated with the call.		
5.3.1.19	The system shall have the capability to park and unpark a call.		
5.3.1.20	The system shall have the capability to notify the caller that their call has been parked and the calls that are parked shall be easily visible to all users of the telephony system to facilitate retrieval of a call from a parked status.		
5.3.1.21	These Call Answering functions shall include the following as a minimum: • Call Answer / Hold / Release • Call Transfer that shall include payload transfer (within and outside the PSAP) • Conferencing (up to 6 parties with a minimum of three parties) • Ability to control (add or drop) parties to a conference call at any point in the call • DTMF/Hook flash support for same line transfer (Tandem transfer) • Multiple line appearances and button appearances • Barge-in (ability to barge-in) • Observe (ability to monitor) and to see ANI/ALI from a remote location • Enhanced Caller ID Display (name and number) available • Remote Call Pick-up • Station to station calls • System-wide and Local Instrument Speed Dial • Mute • In-Call Dialing (incoming and outgoing) with the ability to select multiple outside lines • Automatic Greetings on any type of line • Radio Headset Sharing • Call Park (Local) • Call Park (System Wide Parking) • Number (ANI) Display / Location Identification (ALI) Display • Ability to provide industry standard “flash key” capability to back out of a transfer/conference call without disconnecting caller • Ability for call taker to selectively disconnect parties on the call		

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	• Direct-Outward Dialing • Toll Restriction, by area code, by station line • Support 2-Wire Ring Down Circuits (Direct Lines) • Abandoned Call Back • PSAP to PSAP intercom functions • Support for SIP based 10 digit DIDs incoming and outbound dialing • Simultaneous calls delivered to the PSAPs shall correspond to the number of trunks set forth in Figure 1 unless otherwise directed by the County of Fairfax. The simultaneous calls shall be able to be managed by grouping and call treatment (e.g., redirect, busy signal). • Phone Directory management and ability to search phone directory by keyword available at any position • TDD/TTY call processing • Interface with a an existing satellite system at MPSTOC (currently a PRI based connection but future connection would be a SIP interface)		
5.3.1.22	Provide capability for the provided system to work with the installed call taking headset equipment (two separate jacks capable of receiving a P10 Plantronics headset base). Provide the ability to adjust audio volume levels in the headset using a single volume control knob.		
5.3.1.23	Provided solution shall enable text-to-9-1-1 capabilities using TTY, Web Browser, or i3 interface connectivity and interoperate with the enhanced web browser Text-to-9-1-1 solution being implemented by Fairfax County. The solution shall be in conformance to NENA standards and the Joint ATIS/TIA Native SMS to 9-1-1 Requirements and Architecture Specification (J-STD-110). The provided solution shall also provide the capability to transfer a text message call to a neighboring PSAP jurisdiction with complete history of initial text call passed to the transferred jurisdiction. The transfer of the text "call" from the initial PSAP to the 'transferred to' PSAP should be accomplished without need of any voice communications between PSAPs. The act of transferring a text call to another PSAP should occur via a button selection with a drop down menu of PSAPs to which the text can be transferred to and the ability for the receiving PSAP to acknowledge receipt of the ability to accept the text message. The web browser solution should auto-populate the text being transferred with a text supplement message indicating which PSAP is transferring to another PSAP (e.g., '*Fairfax County* transferring a text message call to *Arlington County'*).		
5.3.1.24	The system shall include a Backup Telephone System (to replace the current backup system in use at MPSTOC) or a failover capability at MPSTOC and Pine Ridge and the Secondary PSAPs to allow calls to be answered on a responder provided backup telephone phone set when the primary telephony platform computer interface is unavailable to accept calls. Such failover capabilities for the backup capabilities shall include functions consistent with the primary telephony interface (such as ALI location information, enhanced caller id, TDD functionality compliant with ADA requirements and the ability to access IRR call recordings) to allow calls of all types to be processed when operating in the backup configuration.		

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	The backup functions should provide a "hot" failover capability (geo-diverse using, as an example, an A and B side) to allow call takers to log in at the B side and take calls with no impact to the A side operation. The responder shall describe the full capabilities of the backup system and any differences from the primary system. The responder should provide an option for a C side failover capability as a backup to the A and B side. Full training on the backup system shall also be provided as well as written procedures for invoking the backup system in an operational environment.		
5.3.2 Call Back Communications Capabilities			
5.3.2.1	The system shall provide the capability to reestablish a call path to a communications device.		
5.3.2.2	The system shall provide the capability to establish a call path between a call taker and a communications device if a call is abandoned before a call taker can answer the call.		
5.3.2.3	The system shall store the results of the call back attempt.		
5.3.2.4	The system shall support the option of maintaining connectivity with the caller's device in situations of premature disconnect by the caller, when the originating network supports that feature.		
5.3.3 Emergency Response Location			
5.3.3.1	The system shall display call location information to the call taker.		
5.3.3.2	The system shall provide the capability to customize the display rules for call locations.		
5.3.3.3	The system shall display call locations based upon display rules.		
5.3.3.4	The system shall be capable of identifying known locations, or landmarks, within a user defined radius of geo-coordinates.		
5.3.3.5	The system shall be capable of converting call location from civic address to geographic coordinates.		
5.3.3.6	The system shall validate all locations entered by the call taker.		
5.3.3.7	The system shall provide the capability to document incorrect location information for correction, in the standard formats.		
5.3.3.8	The system shall display location search results to the call taker.		
5.3.3.9	The system shall provide the capability for the call taker to select the emergency location from the location search results.		
5.3.3.10	The system shall write the emergency location to the call detail record when the call taker accepts an alternate location as the emergency location.		
5.3.3.11	The location source shall be identified and should be verified.		
5.3.3.12	The system shall be capable of supporting three-dimensional location information (longitude, latitude, altitude).		

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	Premise Information Database		
5.3.3.13	The NG9-1-1 Telephony Platform shall support call takers access to PSAP-stored information about a specific location. This information could include building access, hazard warnings, hazardous material information, structural plans, evacuation instructions, and site photos. The system should automatically indicate availability of information based on the AN I of the call.		
5.3.4 Mobile Caller Location			
5.3.4.1	The system shall provide the capability to activate the automatic location update function on an individual call-by-call basis for the duration of the call.		
5.3.4.2	The system shall be capable of providing alerts to call taker when caller location has changed, subject to local policy rules.		
5.3.4.3	The system shall provide the capability for a call taker to manually initiate a location update		
5.3.4.4	The system shall provide the capability for the call taker to manually initiate continuous location updates, at provider-defined update intervals		
5.3.4.5	The system shall archive automatic location updates as part of the Call		
5.3.4.6	The system shall archive manual continuous location updates as a part of the Call so the entire location history can be reconstructed.		
5.3.4.7	The system shall support the displaying of any location information present in the PIDF-Lo.		
5.3.4.8	The system shall provide the capability to display update request results on the map display		
5.3.4.9	The system shall support, if supplied, additional location related parameters such as velocity and direction, and be able to present those in a visual or textual format to the call taker.		
5.3.4.10	Legacy ALI Database Access		
5.3.4.10.1	There will be a period of time during which both the legacy system with ALI and the new NG9-1-1 system will be operational. During the period that the legacy system is still utilized and the ALI function must be maintained and operational. Representative examples of ALI for Fairfax County are shown in Attachment 11.		
5.3.4.10.2	ALI requests shall be made immediately after ANI has been decoded. (Systems which wait for the call taker to go off-hook before sending requests for ALI will not be considered). Automatic rebid timing shall be capable of being established by a system wide parameter.		
5.3.4.10.3	In addition to legacy ALI Database access, the proposed system shall provide the ability to download ANI/ALI information, COF and COP data and other ALI information into other systems (such as CAD) using legacy methods (serial) and shall also natively support other NENA i3 future formats (e.g., XML formats).		
5.3.4.10.4	If the received ALI is unclear or incomplete, a call taker must be able to command the system to repeat (rebid) the request to the database and the rebid drop down display should not obscure ANI/ALI information on the screen.		
5.3.4.10.5	Manual requests of ALI shall be available for a call takers-entered ANI. There shall be a means of disabling Manual database requests if required by law.		

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5.3.4.10.6	The NG9-1-1 Telephony Platform shall be able to produce an immediate hard copy of caller ALI and other gathered data at any time, while a call is in progress or after release. This shall be to a networked laser printer.		
5.3.4.10.7	It shall be possible to use RTF (Rich Text Format) templates to lay out the information that is to be printed and to apply formatting and graphics (e.g., County Logo) as needed to support faxing of information between jurisdictions.		
5.3.5 Multiple Communication Device Support			
5.3.5.1	The system shall be capable of establishing conferences with any type of multimedia from any device capable of calling 9-1-1 and be able to add or drop in parties or devices to the call with maximum flexibility.		
5.3.6 Additional Data (pictures, video, etc.)			
Obtain Additional Data after call delivery to facilitate call processing			
5.3.6.1	The system shall determine which queries for additional data are authorized for access or presentation to the call taking platform based on established policy rules.		
5.3.6.2	The system shall record the query parameters for all queries performed in the call detail record database.		
5.3.6.3	The system shall record the query results for all queries performed in the call detail record database.		
5.3.6.4	The system shall determine which queries are automatically executed based on established policy rules.		
5.3.6.5	The system will provide an indicator that Additional Data is available. Additional Data should be accessible via a standard process involving no more than three steps, such as mouse clicks.		
5.3.6.6	The system shall be capable of acquiring all Additional Data associated with the call and making it accessible to the call taker, subject to security access and local policy rules		
5.3.6.7	The system shall provide the capability for authorized personnel to access Additional Data associated with the call.		
5.3.6.8	The system shall provide the capability to search Additional Data associated with the call.		
5.3.6.9	The system shall display Additional Data associated with the call based on policy rules.		
5.3.6.10	The system shall support queries of Additional Data associated with the call from other internal and external systems (SIP messages, SIP header, call detail record data, floor plans, medical records data, and other data sources).		
5.3.6.11	The system shall support drill-down queries of Additional Data associated with the call to obtain additional detail		
5.3.6.12	The system shall be capable of allowing a PSAP to download Additional Data from an external source for fast retrieval under specifically agreed to conditions		
5.3.6.13	The system shall require that all Additional Data sources received provide data elements associated with the location, caller or call to serve as a cross check of where information was sourced (e.g., assist in identifying spoofing attempts).		
5.3.6.14	The system shall be capable of acquiring additional information during a call from other databases and sources based on the location of the call or the location of the emergency location.		
5.3.6.15	The system shall be capable of distinguishing between data associated with a building or campus and a tenant of such a building or tenant. Each source may have different Additional Data.		
5.3.6.16	The system shall be capable of providing Additional Data associated with the Address of Record of the caller.		

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5.3.7 Data Transfer			
Transfer all Additional Data associated with the call and any manually-entered data (e.g. call taker notes) concerning the call to the appropriate responding agency dispatch or other authorized entity.)			
5.3.7.1	The system shall provide the capability to transfer a call, additional call related data received or a query key for the retrieval of the additional data, call related data created during call processing (e.g. call taker notes), and the call detail record.		
5.3.7.2	The system shall provide the capability to transfer the call and the associated data only to authorized recipients.		
5.3.7.3	The system shall log the transfer of all calls and associated data.		
5.3.7.4	The system shall log data transfer attempts, including transfer request date/time, notification of transfer success/failure date/ time, transfer requestor, intended recipient, transferred data.		
5.3.7.5	The system shall display a message that data was not received to the originating requestor upon failed call data transfer.		
5.3.7.6	The system shall display an acknowledgement message of data receipt to the originating requestor upon successful call data transfer.		
5.3.7.7	The system shall provide the capability to convert the NG9-1-1 location information to meet the capability of the destination PSAP.		
5.3.8 Location Map Display			
Display location and geospatial information on a GIS based map display within the telephony platform. Fairfax County does not currently use any mapped ALI product for telephony. All mapping capabilities currently exist in the CAD system using Fairfax County GIS data that is converted to a proprietary format (Arc-SDE converted to Intergraph) used by the CAD system (a migration to industry standard protocols in the CAD system is planned). As a separately priced option, Fairfax County desires that responder proposals provide for evaluation, a solution with a mapped ALI capability and a solution without a mapped ALI capability. A description of how the responder's solution could interoperate with the existing Fairfax County CAD and mapping capabilities to minimize redundant efforts is desired.			
5.3.8.1	The system shall provide the optional capability to display GIS based data and ALI data using Fairfax County GIS data files.		
5.3.8.2	The system shall provide capability to display a Caller Location on a GIS map display.		
5.3.8.3	The system shall be capable of displaying multiple locations associated with a single call by using different icons to represent the locations.		
5.3.8.4	The system shall provide the capability to zoom on the GIS based map display.		
5.3.8.5	The system shall provide the capability to pan on GIS based map display.		
5.3.8.6	The system shall provide the capability to store geographic information system databases in NENA i3 approved formats.		
5.3.8.7	The system shall provide the capability to turn on and off specific theme based layers of information, and be able to select on specific layers on a GIS map display (e.g. water, hydrants, city boundaries, aerial photography).		
5.3.8.8	The system shall display caller location information on the GIS based map display		

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5.3.8.9	The map display shall have the ability to include both raster and vector data.		
5.3.9 Working with GIS Data			
Manipulate location and geospatial information using standards consistent with NENA 08-003 Detailed Functional and Interface Standards for the NENA i3 Solution.			
5.3.9.1	The system shall provide the capability to manipulate the GIS based map display and utilize the GIS datasets in existence at Fairfax County.		
5.3.9.2	The system shall provide the capability to draw geometric shapes on the GIS based map display.		
5.3.9.3	The system shall provide the capability to select data from the drawn geometric shapes on the GIS based map display.		
5.3.9.4	The system shall provide the capability to search the NG9- 1-1 data by any selected geometric shape drawn on the GIS based map display.		
5.3.9.5	The system shall provide the capability to search the NG9- 1-1 data repositories by any user generated geometric shape.		
5.3.9.6	The system shall provide the capability to display query results on the GIS based map display.		
5.3.9.7	The system shall display the emergency responder agency for a given location.		
5.3.9.8	The system shall have the capability of displaying any information in the databases associated with any locations on the GIS based map display, where such information in not restricted by security or policy.		
5.3.10 Call Handling Protocols and Procedures			
Ensure proper and efficient call handling and compliance with PSAP processes and best practices through the creation and automation of protocols and procedures.			
5.3.10.1	The system shall display call handling procedures (standard operating procedures) to a call taker. The NG9-1-1 Telephony Platform shall support call takers access to PSAP-stored SOPs (Standard Operating Procedures) as well as access to other third-party Emergency Medical Dispatch call handling protocols, and other third party services like Smart911). This will assure procedures are applied in a uniform and consistent manner, in addition to providing training functionality. In addition procedures shall be displayed in hypertext format, allowing call-takers to move quickly through the information to access key procedures quickly. SOP data will be entered by the PSAP. Provision of other third party services would be under separate procurement but the system must have the capability to interoperate with multiple third party systems that support protocols and procedures.		
5.3.10.2	The system shall provide the capability for authorized personnel to edit call handling procedures.		
5.3.10.3	The system shall provide the capability for authorized personnel to suspend call handling procedures.		
5.3.10.4	The system shall provide the capability for authorized personnel to input and edit call handling procedures.		
5.3.10.5	The system shall log all changes made to call handling procedures including unique user id, time, and audit trail of changes made.		
5.3.10.6	The system shall provide the capability for authorized personnel to delete call handling procedures.		
5.3.10.7	The system shall provide the capability for authorized personnel to amend and notate any compliance reports and the system will log any changes.		

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5.3.10.8	The system shall provide the capability to measure a call takers consistency with a call handling procedure.		
5.3.10.9	The system shall provide the capability to generate statistical or call specific reports of a call taker's consistency with call handling procedures.		
5.3.10.10	The system shall provide the capability for a call taker to select the appropriate call handling procedure based on the data associated with the call.		
5.3.10.11	The system will be able to generate statistical or call specific reports based on authorized personnel defined reports.		
5.3.10.12	The system shall store the data that measures the compliance of each call taker.		
5.3.10.13	The system shall provide the capability to read the data that measures the compliance of each call taker to authorized individuals.		
5.3.10.14	The system shall provide the capability to sort the data that measures the compliance of each call taker.		
6.4 Call Management			
6.4.1 Call Detail Records			
6.4.1.1	The Call Detail Record shall at minimum contain: date(s), times, packetized Additional Data, service originator code, Caller Location, Call Type, network processing data, caller classification, Position of agent that answered the call, transferred destination, date and times of various connect and disconnect events, and all other data added by the system during the call processing from originator to call conclusion.		
6.4.1.2	The system shall provide the capability to create a Call Detail Record.		
6.4.1.3	The system shall provide the capability to read a Call Detail Record.		
6.4.1.4	The system shall provide the capability to remove a Call Detail Record for the purpose of archiving or other maintenance activities.		
6.4.1.5	It shall be possible to uniquely identify a call throughout its life cycle in the call detail record.		
6.4.1.6	The system shall provide the capability to print a Call Detail Record.		
6.4.1.7	The system shall allow searching of non-archived historical data without time increment restrictions in the search parameters. The system will allow automatic archiving of CDR records.		
6.4.2 Incident Records			
6.4.2.1	The system shall provide the capability to associate an incoming call with an Incident or Event Record created in the County's CAD system. This is to facilitate, through management information systems data analysis, identification of total call processing time from call receipt (all calls associated with an event) to on-site arrival of units for the event. The responder shall propose a way to associate a call using a NENA compliant CAD output format wherever possible (e.g., EIDD) that is capable of establishing the relationship between telephony records and associated CAD events in the Intergraph CAD system. Proposing a new CAD system is not an acceptable solution to this requirement.		

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6.4.2.2	The system shall maintain the association between an Incident/Event Record, the Call Detail Record, and Call Recording, including notes added by the call taker.		
6.5 Logging Recorder			
Preserve a detailed record of the interactive communications occurring during a call. Fairfax County currently uses a recording system (Verint Systems Audiolog) that is installed at the primary site (MPSTOC) and at the Alternate Site (Pine Ridge). The secondary PSAPs use different recording systems (Herndon and Vienna use a NICE recording system (NiceCall Focus III) and the City of Fairfax uses a light version of the Verint Audiolog system). The responder must either propose a new NG9-1-1 NENA i3 compliant logging recorder to replace the current logging recorder system (functionality) in Fairfax and the secondary PSAPs or the responder's solution must integrate with the current systems installed in each location and specify any requirements or modifications Fairfax needs to take to interface with the current logging recorder. If a new logging recorder is proposed it must be separately priced as an option in the responder's proposal response and the advantages of a replacement system must be made clear in the responder's written response. Fairfax County requires the proposer to obtain all parts, integrations, and services in such a manner so as to not jeopardize current operations recording or void any outstanding warranties or service maintenance agreements.			
6.5.1 Logging Recorder			
6.5.1.1	The system shall support recording of all call payloads (including without limitation, 911 and administrative line voice calls) that are received in the Telephony Platform whether at the primary site at MPSTOC, the Alternate Site at Pine Ridge, or the secondary PSAPs or when calls are made from mobile remote laptops or workstations.		
6.5.1.2	The system shall provide the capability to log calls at redundant, diverse locations.		
6.5.1.3	The system shall log all incoming calls, multimedia, data, and designated non-emergency communications.		
6.5.1.4	The system shall provide a mechanism to record phone calls from EMS field units calls to designated hospital lines. Currently, EMS field units call a ten digit number within the PBX and the units select a hospital from a menu tree and are connected to the hospital (this setup allows the recording of the conversation to take place). Additional details on the current setup are available in Attachment 12.		
6.5.1.5	The system shall link logged data with the unique identifier of each call.		
6.5.1.6	Multiple call lists shall be provided, showing different groupings of call events, for example, "All Abandoned Calls", "All Previous Calls from this ANI", "All Calls previously handled by this Call takers".		
6.5.1.7	A Query feature shall allow call records to be filtered and searched on the fly.		
6.5.1.8	The system shall be able to link logged data regardless of media type to construct a single logged record of all data associated with a call or incident.		
6.5.1.9	The system shall provide the capability to transfer logged data to an external source. The proposed system shall provide standard interfaces for logging recorders. The responder shall describe requirements for interfacing to the Fairfax County and secondary PSAPs currently installed recorders (Verint) and how new media types (media such as video and pictures) will be recorded and requirements for storage for new media types.		
6.5.1.10	The system shall provide the capability to transfer selected components of the logged data set based on the third party's level of authorization.		

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6.5.1.11	The system shall be capable of indicating call termination.		
6.5.1.12	The system shall be capable of logging which party terminated the call.		
6.5.1.13	The system shall provide the capability to access logged data and also to access such data from a remote location such as a secondary PSAP.		
6.5.1.14	The Logging function shall support “virtual logger” architecture, i.e. where a Logging function can be shared by multiple agencies, but each agency has access to only its own data and configuration.		
6.5.1.15	The system shall log calls while the call is in a call queue, assigned, in process, and on hold.		
6.5.1.16	The system shall provide the capability to display previous logged data for Instant Playback based on established local policy.		
6.5.1.17	The system shall provide the capability to retrieve logged data with its Call detail Record.		
6.5.1.18	The system shall provide the capability to search the logging system database and retrieve data based upon search criteria.		
6.5.1.19	The system shall provide the capability to retrieve logged data after and during a call (including the ability to listen or monitor a call in progress).		
6.5.1.20	The system shall provide the capability to monitor logged data during a call.		
6.5.1.21	The system shall provide the capability to display non-audio logged data.		
6.5.1.22	The system shall provide the capability to replay logged data regardless of media type.		
6.5.1.23	The system shall provide the capability to pause, rewind, and fast forward logged data.		
6.5.1.24	The system shall provide the capability to locate an incident and all its related calls within the logging function.		
6.5.1.25	The system shall support validation and credentialing of authorized IP connections for logging and associated functions.		
6.5.1.26	The Logging function shall support playback of multiple video streams simultaneously.		
6.5.1.27	The Logging function shall support Simultaneous display and/or playback of Logged Data such that the original timing of the Logged Data is reproduced in the original sequence.		
6.5.1.28	The Logging function shall support Retrieval of Logged Data for purposes of conducting evaluations and assessments of PSAP personnel performance, i.e. quality assurance and quality monitoring activities.		
6.5.1.29	The Logging function shall support Retrieval of Logged Data for purposes of producing external copies. Examples would be copies produced in response to a subpoena, request from a Prosecutor, or media request.		
6.5.1.30	The Logging function shall support acquisition of Display data (screen capture) via the user interface.		
6.5.1.31	The Logging function shall support fault tolerant data storage such that failure of a single storage medium will not result in loss of data.		
6.5.1.32	The Logging function shall provide and support a fault-tolerant architecture that allows failover to another Logging function in the event the primary Logging Service becomes unavailable.		
6.5.1.33	The Logging function shall keep an “audit trail” of all configuration changes and all attempts to access Logged Data (successful and unsuccessful). This audit trail shall contain the type of access or change the parameter or data accessed		

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	the username, and the date/time of the access or change. The audit trail data constitutes a "chain of custody" record for the referenced data or configuration parameters		
6.5.1.34	The Logging function shall support retention policies for Logged Data that deletes expired data as required by local policy rules. These retention policies must be capable of operating in the "virtual logger" architecture described above		
6.5.1.35	The Logging function shall support "functionality that allows the user to mark certain Logged Data to NOT be deleted when its retention period has expired.		
6.5.1.36	The Logging function shall support time synchronization from multiple methods.		
6.5.1.37	Event Reports The system shall provide, at a minimum, the following event reports: • Time of call payload entry through BCF; • Time for each functional element to perform routing and PSAP assignment; • Time of answer at PSAP; and • Time of disconnect at PSAP. Responders shall describe in detail the event reporting function of the system. Event reports shall record the timing of transit for each call payload for purposes of diagnostics. All event reports shall, at a minimum, include the functional element being reported and the system time of such event. The County of Fairfax shall have remote access to such event reports. The system shall allow for the County of Fairfax to request ad hoc reports.		
6.5.1.38	**Instant Recall Recorders** The system shall include the ability for individual call taker workstations to instantly replay prior call payloads or call payloads in progress, regardless of the call payload type or size. The recording feature must be automatic, must save the conversations to the hard drive, provide a minimum of four hours storage time for all calls at that workstation, and be easily accessible using a Windows user interface. The IRR should provide the capability to listen back to a call in process to allow call takers to clarify what was said by a caller. The user should be able to see all calls from that workstation that were made in the last four hours. The installed instant recall recorder shall allow, at a minimum, replay time of four hours (240) for each voice call and the equivalent of sixty (60) minutes, in size, for other call payload types. (All calls, regardless of length, shall be accessible from the long term recorder interfaced to the system). The response shall describe how the system addresses this issue, including the amount of available recording time and/or extended memory requirements for each type of call payload (i.e., voice, text, photographs, video, telematics, etc.) The response shall describe whether the system has the ability to replay graphics. The solution for IRR must be able to erase old IRR recordings when the workstation hard drive reaches a set amount of capacity or when a recording reaches a certain age. The response must describe this functionality.		
6.6 NG9-1-1 Telephony Platform CPE Maintenance Access			
6.6.1	The selected Responder shall be responsible for meeting all requirements agreed to in the response to this RFP including system design, delivery, installation, training, maintenance and integration. Fairfax County will consider the		

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	selected responder to be the sole point of contact with regard to contractual matters, including the performance of services and the payment of any and all charges resulting from contractual obligations. Upon contract award, the selected Respondent will be directly responsible for all of Respondent's subcontractors, if any. The selected Respondent will designate a project manager to serve as the point of contact for NCTCOG and to manage the system implementation.		
6.6.2	A browser-based interface shall provide configuration and maintenance access to the system.		
6.6.2	Maintenance access shall support password security with multiple access levels.		
6.6.3	The system must support backup of its configuration files to a USB key or similar storage device.		
6.6.4	The responder shall provide remote diagnostics and maintenance that permits the responder to monitor system performance, and perform routine diagnostics and maintenance from a remote maintenance facility, and Responders shall identify the location and capabilities of this facility.		
6.6.5	The responder shall deploy a mechanism to efficiently image computers and servers to minimize downtime and to ensure standard builds for computer systems.		
6.6.6	The servers shall have hot swap RAID hard drives, redundant hot swap power supplies (with two (2) separate electrical inputs) or power sources depending on architecture. The servers may utilize clustering and other high availability technology to maximize system uptime. Responders shall describe in detail the proposed RAID.		
6.6.7	The responder shall have or establish by the date of equipment delivery, a certified service representative for Fairfax County, who must be able to physically respond to the site of a reported problem or a request for service within 2 hours.		
6.6.8	Include a pricing schedule for responder supported maintenance.		
6.6.9	The responder shall, within sixty (60) days following contract award, submit to the County of Fairfax for approval, detailed solution design and technical documents that address, at a minimum, hardware, servers, logical, and software diagrams and specifications, customization and application design.		
6.6.10	The system must be capable of synchronizing to a network time protocol (NTP) source and the responder proposal shall indicate their recommended solution for such a capability. In the absence of an NTP source, system shall remain internally synchronized (common equipment and call handling workstations will be synchronized to the common equipment time).		
6.7 Integrated TTY			
6.7.1	The NG9-1-1 Telephony Platform shall provide integrated on-screen TTY for all lines. The device should handle Baudot protocols. The system shall allow the call-taker to communicate freely by using the keyboard and/or selection of pre-programmed messages.		
6.7.2	Each answering position shall be equipped with TTY processing capabilities that is in conformance with the Americans with Disabilities Act (ADA) for people with disabilities who use teletypewriters (TTYs), which are also known as "telecommunications devices for the deaf (TDDs)".		

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6.8 Management Information System			
6.8.1	The proposed system shall provide a management information system (MIS) that will produce a wide range of predefined, comprehensive operational and historical reports. The provided MIS must provide a general purpose MIS application that allows Fairfax County to build and or run User-developed reports using data from multiple sources (telephony, CAD, etc.) all with the intent of aiding the County in managing 9-1-1 center operations.		
6.8.2	The MIS shall allow on-the-fly filtering for required information using an extensive range of search criteria that are automatically presented based on the report selected and the site configuration.		
6.8.3	The MIS shall display reports on-screen, printer or saved to file, and allow scheduling of automatic generation of reports.		
6.8.4	The MIS user interface shall be provided via a web browser interface.		
6.8.5	**Operational Reporting** The response shall include a description of the comprehensive management and statistical reporting functionality that will provide the County of Fairfax and/or PSAP management personnel with real-time and historical records. The system's operational reporting shall be user friendly, customizable, and capable of generating reports for varying time periods, from one or all PSAPs cumulatively, including without limitation, ad hoc reports and to run reports as needed. The system shall have browser-based capabilities for ease of remote access. The retention period for such historical records shall be a minimum of three (3) years. The system also shall be able to auto-schedule the generation of predefined ad hoc reports. At a minimum, the following data elements shall be readily available for reporting purposes at the system level and at the PSAP level: A. Call payload processing times; B. Seizure time; C. Position answered; D. Answer time; E. Disconnect time; F. Incoming IP address; G. Total count of Call payloads by Type; H. Average Event Waiting Report; I. Average Event duration; J. Total Abandoned Calls (a call placed to 911 in which the caller disconnects before the call can be answered by the enhanced 911 telecommunicator; K. Calls by incoming IP address; L. Calls by hour of day; M. Calls answered by position; N. Calls answered by all positions;		

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	O. Calls answered by user ID; P. Calls by day of the week; Q. Calls transferred; R. Agent availability report; S. Call volumes; T. Individual Call Information including CAD event call related to; U. Collection of Calls; V. Summary of Call Loads; W. Total number of wireless and wireline 911 calls by PSAP, by cellular sector, wireline only, wireless only; X. Total number of wireless and wireline 911 calls transferred to the local PSAPs, by PSAP, by cellular sector, wireline only, wireless only; Y. Total number of wireless and wireline 911 calls transferred from the local PSAP location to which call was transferred, type of entity to which call was transferred, and percentage of each type of entity to which call was transferred, by PSAP, by cellular sector, wireline only, wireless only; and Z. Total number of simultaneous wireless and wireless 911 calls per day, week, month, and year, and the number of occurrences, and the dates(s) of occurrence, by PSAP, by cellular sector, wireline only, wireless only. The response shall describe, and provide examples of, standard individual workstation reports generated by the CPE regarding individual calls, collection of calls and call volumes, summary of call loads, and other pertinent information gathered by the CPE. The system should support visual representations of data in various forms such as pie charts, bar graphs and data grids, ability to save reports to an individual folder, ability to share reports with other (some or all) users. Preferred abilities could include capabilities of viewing data superimposed on ESRI GIS maps. The ability to export data in .CSV format (Excel) or .XML format (Access) for use in spreadsheet, database or statistical analysis applications is required.		

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6.9 Legacy Gateways and ESInet Interfaces			
6.9.1 Legacy Gateways and ESInet Interfaces			
6.9.1.1	The County of Fairfax expects that legacy gateways (both PSAP and network) will exist outside of an ESInet, and the County of Fairfax envisions a period of time that legacy gateway services may be required by the County of Fairfax. Responders shall provide an effective and efficient solution to the provisioning of legacy gateway services. The responder will provide a cost efficient and reliable solution to support the implementation of the proposed CPE and will provide a detailed approach plan and migration strategy on how calls currently are received in the 9-1-1 environment of the County and its secondary PSAPs and how the county should position its environment to support a transition to an interim NG9-1-1 ESInet that interfaces to the current Verizon Selective Router network. The approach outlined by the respondent should include recommendations to provide backup call processing capabilities both on-site at MPSTOC and at the Alternate Center at Pine Ridge and the secondary PSAPs. The county will, over time, transition from the existing legacy TDM Selective Router Verizon network to an IP network consistent with the NENA guidelines for an ESInet and Emergency Call Routing Function (ECRF). This RFP desires to make an initial transition step as outlined below which will interoperate with the existing Selective Router network but will also add NENA i3 networking component interfaces to facilitate a transition to a future time when calls will be received over an IP connection rather than a TDM connection.		
6.9.1.2	The respondent's proposed solution will demonstrate and provide a clear and understandable migration strategy to an interim NENA i3 ESInet for the County's MPSTOC facility, its Alternate facility at Pine Ridge and the inclusion of the County's secondary PSAPs at Herndon, Vienna and the City of Fairfax. Costs and hardware and networking requirements will be clearly delineated for the proposed migration strategy from today's environment to a solution that brings together the Fairfax County PSAP (two sites) into a networked solution with its three secondary PSAPs. All implementation costs and equipment resulting from this solicitation for interconnecting the new Fairfax County Telephony 9-1-1 system with the City of Fairfax PSAP should be separately identified to facilitate the County's billing arrangements with the City of Fairfax.		
6.9.2 Elements of a Desired Environment for New Telephony Platform- Phase 1			
6.9.2	Elements of a Desired Environment for the New CPE Telephony Platform - Phase 1 Fairfax County awaits the responder proposed migration strategy from the current environment to a new operating environment. In addition to establishing a foundation that facilitates transition to an i3 ESInet (a limited ESInet capability), Fairfax County desires at least the following be provided during the first phase of any proposed transition: 1) MPSTOC – DPSC desires that the PRI circuits be replaced with SIP trunks provisioned through one of the County's current providers (Cox Communications). The SIP trunks would traverse the County's mesh network (the INet) to the "A" Core processing side of the provider's proposed PBX replacement (softswitch). There would be a Legacy Selective Router gateway provided for the incoming CAMA trunks. The current 9-1-1 PBX would not process any calls for the 9-1-1 center (VDOT and VSP operations remains on the 9-1-1 PBX) after the Phase 1 transition from the current CPE.		

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	2) Pine Ridge – DPSC assumes (but is not mandating) the provider's Telephony Platform solution would replace the existing PBX and the SIP trunks and that SIP circuits would be provisioned from Cox that would traverse the County's mesh network (INet) to the B Side Core softswitch of the responder's proposed solution. There would also be a Legacy gateway from Pine Ridge to the Pine Ridge CAMA trunks which are served by the Braddock Road and Merrifield Road Verizon central offices. The Telephony platform at Pine Ridge (the B side) would require access through the Legacy gateways to the CAMA trunks that service MPSTOC (on the A side). 3) Secondary PSAPs - Fairfax County desires that the secondary PSAPs at Herndon, Vienna, and City of Fairfax are networked into the Core soft switches provided by the responder's proposed Telephony platform solution and assumes they would receive SIP traffic into their locations utilizing redundant paths to each location (if such paths are available). Fairfax County has some network connectivity to each location but the responder must propose a solution that provides a redundant and reliable capability. Any costs beyond the network connectivity provided by the county must be separately itemized by the responder in their technical and cost proposal. The solution must provide some failover capabilities to each location and the responder should provide details as to how such failover is made available. 4) PSAP-to-PSAP IP Network - The CPE solution must support the transfer of "live" E9-1-1 calls or administrative calls with caller ID to neighboring County networked PSAPs utilizing a future IP infrastructure and not routing back through the 9-1-1 tandem. Transfers through the tandem must also be supported. The transferred call must be delivered with all the ANI/ALI information or caller ID information that the original workstation received. This functionality must be supported with both supervised and unsupervised transfers. The solution must be capable of disconnecting all parties upon disconnect no matter what type of call origination connection types are used. (E9-1-1 trunks analog or IP, administrative lines loop or ground start, ring down lines, etc.)		
6.9.3 Network Interface Connections			
6.9.3	The responder solution should provide the network interface connections that would facilitate a future transition which would include NENA i3 components such as: 1) Legacy Gateways - The County of Fairfax expects that legacy gateways (both PSAP and network) will exist outside of an ESInet, and the County of Fairfax envisions a period of time that legacy gateway services may be required by the County of Fairfax. Responders shall provide an effective and efficient solution to the provisioning of legacy gateway services. 2) Legacy Network Gateway (LNG) -A Legacy Network Gateway is a signaling and media interconnection point between callers in legacy wireline/wireless originating networks and the i3 architecture. The Legacy Network Gateway logically resides between the originating network and the ESInet and allows i3 PSAPs to receive emergency calls from legacy originating networks. Calls originating in legacy wireline or wireless networks must undergo signaling interworking to convert the incoming Multi-Frequency (MF) or Signaling System Number 7 (SS7) signaling to the IP-based signaling supported by the ESInet. a. Provide a thorough discussion of any applications, appliances and functions within the proposed solution for a Legacy Network Gateway (LNG). The proposed NG9-1-1 Telephony platform shall provide a Legacy		

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	Network Gateway to allow for a system interface between the legacy TDM Verizon network and a Regional ESInet where the call routing services are anticipated to be located for Fairfax County for NG9-1-1 as the County transitions away from the TDM network. b. The LNG, located outside the ESInet on the Access side of the architecture, shall provide connection to the legacy system components utilizing pieces of the legacy system infrastructure, including the existing ALI data management system and the two (2) local Verizon selective routers. The LNG shall attach sufficient information to the call, such as location and callback number, for handling within the ESInet. Responders shall describe the LNG within the ESInet environment and its approach to sizing this component and to identify an effective and efficient solution to the provisioning of legacy gateway services for providers. 3) Legacy PSAP Gateway (LPG) The Legacy PSAP Gateway is a signaling and media interconnection point between an ESInet and a legacy PSAP. It plays a role in the delivery of emergency calls that traverse an i3 ESInet to get to a legacy PSAP, as well as in the transfer and alternate routing of emergency calls between legacy PSAPs and i3 PSAPs. The Legacy PSAP Gateway supports an IP (i.e., SIP) interface towards the ESInet on one side, and a traditional MF or Enhanced MF interface (comparable to the interface between a traditional Selective Router and a legacy PSAP) on the other. The Legacy PSAP Gateway also includes an ALI interface (as defined in NENA 04-001 or NENA 04-005) which can accept an ALI query from the legacy PSAP. The legacy PSAP controller supplies an appropriate ALI query key (i.e., "ANI") for the call. When queried with this key, the Legacy PSAP Gateway responds with the location. 4) Border Control Function (BCF) - The Border Control Function provides the External security border for the ESInet and the internal isolation border for the PSAP. It has both firewall and Session Border Controller (SBC) (SIP specific) parts. The system shall include a border control function that provides a secure entry into the ESInet for call payloads presented to the network. The responder shall provide redundant network appliances at any data center, including but not limited to, firewalls, routers, switches, and Ethernet cabling, as required, to ensure connectivity to the ESInet demarcation point, call payload transmission upstream and downstream, and network security for each PSAP and for any of the data centers. 5) Emergency Call Routing Function (ECRF) interface - The system shall include an interface to an i3 compatible emergency call routing function that utilizes location information to route emergency calls to the appropriate PSAP. The initial implementation of CPE will utilize the legacy Selective Router network for receipt of calls yet this ECRF interface must be present in the proposed solution to allow Fairfax County to begin a phased implementation to an IP network where the ECRF services will be performed on the ESInet. Responders shall describe in detail the ECRF of the system and its relationship to other location-based call routing functions that may be offered by the bidder. Responders shall detail the protocols used by the ECRF and shall cite the standards that the ECRF meets, along with the minimum requirement for GIS data. 6) Emergency Service Routing Proxy (ESRP) - The system shall provide an emergency service routing proxy for call delivery to the appropriate PSAP based upon location and routing rules. Responders shall describe the system's use of the LoST protocol and how it interacts with the overall operation of the ESRP. Responders shall describe in detail the system's process for the functions related to the ESRP and shall indicate any outstanding issues that the system may have with this process (as it is specified in the NENA standards referenced in this document).		

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	7) Location Validation Function (LVF) - The system shall include a location validation function that shall be available to validate location information in order to ensure proper routing to the appropriate PSAP. 8) Policy Routing Function (PRF) - The system shall have a rules-based routing proxy functionality. Responders shall describe how the system's rules-based routing interfaces to the other components making up the i3 architecture. Responders shall specifically identify the interface used by the PSAP to establish these rules and any conditions that may exist limiting its function. 9) Location Information System (LIS) - The system shall have a LIS interface. Describe your approach to providing this interface to originating service providers systems and the implementation strategy the proposed solution would advocate to address this evolving future requirement. 10) ALI Database - The proposed system shall provide an interface to the legacy Verizon ALI Database.		
6.9.4 Network Items not within Scope of this RFP			
6.9.4	At some point in the future, the existing Verizon selective router TDM network will transition away and be replaced by a fully functioning ESInet where all calls will traverse an IP network and be received on the local ESInet. Fairfax County is not requesting the responder provide that replacement (yet to be developed) network solution within this RFP. The responder solution should, however, provide the NENA i3 compatible network interface connections that would facilitate a future transition.		
6.10 Workstation Hardware Requirements			
6.10.1 Intelligent workstation			
6.10.1.1	The intelligent workstation hardware must include a Windows based PC capable of supporting of two 19-inch monitors. The central processing unit (CPU) must be configured with robust and reliable microprocessors along with all necessary data and audio interfaces. The CPUs must also be configured with properly sized power supplies and hard drives to support 100 percent of the CPE and map display requirements.		
6.10.1.2	The contractor shall deploy a mechanism to efficiently image computers and servers to minimize downtime and to ensure standard builds for computer systems.		
6.10.1.3	Any cable lengths for the workstations at MPSTOC and Pine Ridge are non-standard lengths (more than 6 feet) and the provided solution must include cables of sufficient length.		
6.10.2 Input Device Arbitration			
6.10.2.1	The Respondent must provide, as an option, an independent keyboard and mouse arbitration device allowing the user to switch between four applications or systems by using from one to two keystrokes or mouse clicks. The standalone device must provide the capability for a single keyboard, mouse and monitor to control multiple applications.		
6.10.2.2	Any cable lengths for the arbitration device at MPSTOC are non-standard lengths (more than 6 feet) and the provided solution must include cables of sufficient length.		

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6.10.3 Genovation Keypad			
6.10.3.1	The Respondent must provide, as an option, a Genovation-type keypad to minimize repetitive key strokes and to facilitate dialing outside of the computer display screen or keyboard dialpad. The Respondent must include a 10-foot cable extension in their option.		
6.10.3.2	Any cable lengths for the Genovation keypad are non-standard lengths (more than 6 feet) to support equipment configurations at the Bramic call taker/dispatcher workstations and the provided solution must include cables of sufficient length.		
6.10.4 Workstation keyboard			
6.10.4.1	The solution must be capable of processing calls including communicating with telecommunications device for the deaf, teletypewriter (TDD/TTY) callers by utilizing a standard IBM PC 101 keyboard. The keyboard keypad is required to be used to dial telephone numbers or to input numbers.		
6.10.4.2	Any cable lengths for the workstation keyboards non-standard lengths (more than 6 feet) and the provided solution must include cables of sufficient length.		
6.10.5 Headsets Interface			
6.10.5	Provide capability for the provided system to work with the current installed call taking headset equipment (two separate jacks capable of receiving a P10 Plantronics headset base). Fairfax County is considering migrating to wireless headsets. Responders should provide recommendations to support wireless equivalent headsets.		
6.11 Voice Quality Standards			
6.11.1	**Voice Quality Standards** The Mean Opinion Score, or MOS, provides a numerical indication of the perceived quality of received media after compression and/or transmission. The system shall obtain a MOS of four (4) or higher per the numerical measure set forth in the table below. Responders shall describe in detail the methodology to be used to meet this target and provide ongoing measurement to ensure voice quality. MOS Quality Impairment 5 Excellent Imperceptible 4 Good Perceptible but not annoying 3 Fair Slightly annoying 2 Poor Annoying 1 Bad Very annoying		
6.12 Printers			

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6.12.1	**Printers** The system should interface with Fairfax County provided network printers.		
6.13 Time Server			
6.13.1	**Time Server** The system shall include a network time protocol service for time-of-day information. The time server shall provide several additional Ethernet ports for the purposes of providing time synchronization to non-interconnected LANs. The responder shall, at the direction of the County of Fairfax, configure the time source at the PSAP, at the time of installation of the time source, to provide time synchronization to non-interconnected LANs. Responders shall describe how the applications and appliances, CPE, and DLRs shall be synchronized with this time source using standards-based protocols.		
6.14 Administrative Lines			
6.14.1	**Administrative Lines** The system shall support administrative phone lines and phone sets for each PSAP using the existing telephone numbers and provide functions that support the use or replacement of the direct lines (ring down circuits) that are in use currently. Attachment 13 lists details on the current configuration of direct lines used at MPSTOC. The response shall describe in detail the proposed administrative line interface. Any and all soft switches supplied by the responder shall comply with the County of Fairfax's regulations governing MLTS operators.		
6.15 Abandoned and Silent Calls			
6.15.1	**Abandoned and Silent Calls** The system shall provide the following functions: • Ability to configure the system to either pass or not pass abandoned calls • Abandoned Call Indicator that provides a visual and audio alarm that alerts that an Abandoned Call has been received; • Detection of DTMF Tones that displays corresponding digits on the screen (Silent Call Procedure); and • The ability to identify and answer TDD/TT/TTY and abandoned and silent calls including complete and accurate ANI and ALI of the TDD/TT/TTY calls.		
6.16 Audio Monitoring			
6.16.1	**Audio Monitoring** The responder shall provide, as an option, an analog and digital demarcation point for third party audio applications and appliances to retrieve audio feeds from all trunks and administrative lines at PSAPs designated by the County of Fairfax in its sole discretion. The demarcation point shall protect PSAP CPE and applications and appliances from any negative effects of such audio equipment.		
6.17 Remote Ringer			
6.17.1	**Remote Ringer**		

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	The responder shall supply, where needed, remote ringers at PSAPs to extend the audible ringing capability of the CPE to rooms inside and outside of the communications area.		
6.18 Call Pole Light			
6.18.1	The responder shall supply, where needed, an interface to the call poles at each call taker workstation to illuminate a light at the pole when a call taker receives an incoming call at the workstation. A contact closure, closed for the duration a position is on a call, open when the position is not on a call, is needed at each position with a call pole.		
6.19 System Administration The response shall describe the overall system administration. The response shall address each of the subcategories below. System administration is intended to include all aspects of system monitoring and pro-active fault prevention. This service shall be provided 24 x 7, and shall act as the single point of notification for all system issues.			
6.19.1 Administration			
6.19.1.1	**Administrative Positions** The responder shall provide and maintain a minimum of one administrative workstation position at each secondary PSAP. MPSTOC has a requirement for at least 12 administrative workstations used in various positions in the building. Pine Ridge requires three administrative workstations. The administrative position shall be used to access reporting functions and other administrative or maintenance functions.		
6.19.1.2	**Administrative Functions** Access to administrative configuration tools (user logins, auto dial entries, and other routine administrative functions) for PSAPs shall be limited to adding, deleting or modifying the entries at their respective location. The responder shall identify any limits placed upon the administrative functions.		
6.19.2 Environmental Requirements			
6.19.2	**Environmental Requirements** Responders shall describe in detail the environmental requirements of the system, including without limitation, space, power, heating, ventilation, and air conditioning (HVAC) requirements. The responder shall provide to the County of Fairfax the engineered BTU output and HVAC parameters for all CPE.		
6.19.3 Diagnostics			
6.19.3	**Diagnostics** The system shall include built-in diagnostic software that shall automatically monitor alarm conditions of the equipment, applications, appliances, and services, and shall initiate audible and visual alarms and alerts in the event of any failure or disruption of the operations and/or processes and that shall include pro-active alerts for predictive failures. The County of Fairfax reserves the right to request additional alarms.		

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	The system shall alarm at the supervisor and administrative workstations (and other workstations identified by the County of Fairfax in its sole discretion) and through other immediately recognized communications when the system is off line, and, where practicable, the system shall alarm at all PSAP positions. The response shall include a listing of the system's standard alarms. The system shall include functionality that provides for automatic notification to the responder's diagnostic/repair center in the event of any failure or alert. Responders shall identify all alarms reportable diagnostic anomalies, alarms, and alerts and shall state the frequency of review of such anomalies, alarms, and alerts. Responders shall define system diagnostic and normal tolerance practices and reports. The responder shall maintain a daily report that logs alarms received by the system. The report shall be reviewed on a daily basis by the responder's technical support staff as a preventive maintenance and proactive service log. The County of Fairfax shall have on-line access to system report and logs, and the system shall have the ability to notify the County of Fairfax via SMS, email, or other means requested by the County of Fairfax.		
6.19.4 Alarms			
6.19.4.1	Alarms will be generated in response to abnormal occurrences requiring the attention of maintenance or supervising personnel.		
6.19.4.2	Multiple alarm severity levels shall be supported.		
6.19.4.3	Alarms will be logged. Log shall be viewable via a browser-based maintenance interface.		
6.19.4.4	Notification actions performed in response to an alarm shall be configurable by severity level.		
6.19.4.5	The destination of alarm messages shall be configurable.		
6.19.4.6	**Self-Monitoring** The system shall include a self-monitoring function of monitoring vital processes and sending alarms in the event of an alarm condition. The system shall notify the communications supervisor, local system administrator, and/or local maintenance personnel upon detection of an alarm.		
6.19.4.7	**System Health Monitoring** The system shall include a health monitoring function that shall monitor the functioning of the system. The system shall be able to produce ad hoc reports of system functioning, and the County of Fairfax shall have read-only access to such reports. Responders shall specify a schedule by which proactive testing shall be performed to ensure the continued health of the system.		
6.19.4.8	**Remote Access** The response shall define how secure remote access to any or all components of the system is achieved, including security of such access. The County of Fairfax shall have remote read-only access to all components of the system.		
6.20 Project Management			

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6.20.1 Project Management Staffing And Planning			
6.20.1.1	The selected Responder shall be responsible for meeting all requirements agreed to in the response to this RFP including system design, delivery, installation, training, maintenance and integration. Fairfax County will consider the selected responder to be the sole point of contact with regard to system maintenance and contractual matters, including the performance of services and the payment of any and all charges resulting from contractual obligations. Upon contract award, the selected Respondent will be directly responsible for all of Respondent's subcontractors, if any. The selected Respondent will designate a project manager to serve as the point of contact for Fairfax County and to manage the system implementation.		
6.20.1.2	**Project Management Staffing And Planning** Responders shall describe in detail the project management, staffing and planning functions. The responder shall provide for project management to ensure a satisfactory implementation. Staffing for project management shall include, at a minimum, one designated project manager responsible for oversight, management, and supervision, and status reporting of their own technical personnel involved in the provisioning activities. Project managers shall have substantial experience working on large scale, integrated public safety technology implementations. The responder's proposed candidates for project management positions shall be approved by the County of Fairfax.		
6.20.1.3	All written documents shall be delivered in machine-readable format (Word, Visio, Excel, Project) , capable of being completely and accurately reproduced by computer software on a laser printer. All itemized and/or annotated lists shall be delivered in computer spreadsheets, capable of being imported to Microsoft Excel 2010 or higher. All meetings shall be held at the offices of the County of Fairfax, unless agreed to otherwise by the County of Fairfax.		
6.20.1.4	The responder shall be sufficiently staffed and equipped to fulfill responder's obligations under the contract, responder's services shall be performed by appropriately qualified and trained personnel, with due care and diligence and to a high standard of quality as is customary in the industry, in accordance with the terms and conditions of the contract and in accordance with all applicable professional standards. The responder shall ensure that appropriate organizational management has authority to exercise decision-making over contractual matters, and the responder shall escalate such matters to the appropriate organizational level.		
6.20.2 Contract/Account Manager			
6.20.2.1	**Contract/Account Manager** The responder shall designate a Contract/Account Manager assigned to meet the County of Fairfax's needs under the contract and any renewals thereof. The Contract/Account Manager shall be responsible for oversight and management of contract performance and shall act as the primary contact person for receipt of notice and other communications under the contract, including but not limited to, timely reports and written responses and attendance at meetings as required by the County of Fairfax. The Contract/Account Manager shall not be changed without the prior written approval of the County of Fairfax.		
6.20.2.2	**Project Manager**		

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	The responder shall, at a minimum, designate a project manager, and the designated project manager shall perform project management on behalf of the responder. The Project Manager shall not be changed without the prior written approval of the County of Fairfax. The project manager shall: • Be responsible for administering the agreement and the managing of the day-to-day operations of the project; • Serve as an interface between the County of Fairfax and all responder personnel participating in the project; • Develop and maintain the Project Management Plan, in consultation with the County of Fairfax; • Be available to be on-site at the County of Fairfax's offices upon request from the County of Fairfax; • Facilitate regular communication with the County of Fairfax, including weekly status reports and updates, and review the project performance against the project plan. ▪ Facilitate weekly project status meetings for the duration of the engagement; • Provide all documentation to be discussed at scheduled meeting at least twenty-four hours prior to said scheduled meeting; • Update the project plan on a weekly basis and distribute at weekly meetings for the duration of the engagement; • Sign acceptance forms to acknowledge their receipt from County of Fairfax; • Be responsible for the management and deployment of responder personnel; • Participate in regular meetings, at least monthly, or as otherwise scheduled by County of Fairfax personnel, to take place on-site at the offices of the DPSC or via telephone conference call; • Coordinate with any and all sub-responders to ensure that any and all sub-responders participate at meetings or on conference calls; • Adhere to change management protocols; • Participate and assist on special projects at the request of the County of Fairfax with pricing to be negotiated as assigned; and • Provide a customer informational bridge in a timely manner for the purposes of information sharing, data gathering, and coordination.		
6.20.2.3	**Change Management** Responders shall employ change management protocols and shall describe in detail their procedures for service and change management processes that shall include all aspects of the project, including without limitation, data center, network, and CPE build documents. The responder shall use best practices using the Information Technology Infrastructure Library (ITIL) or equivalent framework to improve service, manage change, and minimize downtime. The responder shall provide change management reports for system and other changes.		
6.21 Security, Anti-Virus, And Patch Management			
6.21.1 Overall Security Management			
6.21.1.1	**Overall Security Management**		

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	Responders shall describe in detail the system's security, Anti-Virus, and patch management processes for all software to include the operating system. The responder shall maintain security patch management, Anti-Virus, Anti-Spam, and Anti-Malware processes and products that are consistent with Fairfax County security policies. The responder shall also maintain an intrusion protection service/intrusion detection service, pro-active threat detection solution for security threats. The responder shall employ security measures for the CPE, applications, and appliances at the PSAPs. These measures shall include physical safeguards, operating system hardening, hardware and software, information security best practices, user logon procedures by individual users and generic logons for shared use by supervisors, stringent change management processes, security incident response, educational efforts and organizational policies.		
6.21.1.2	**Application/Appliance Security and Authentication** All applications and appliances shall support the i3 security standards for authenticating users requesting services (call routing, call payload delivery, etc.). Responders shall fully explain how authentication credentials shall be issued to entities that request services from the applications and appliances provided under this RFP and the methods employed to examine and authenticate a requester's credentials at the time that service requests are made. The responder shall follow i3 standards for issuing credentials and authenticating user requests. The responder shall comply, where applicable, with NENA Security for Next Generation 911 Standards, including without limitation, NENA NG-SEC Document 75-001, NENA i3 Technical Requirements Document 08-751, NENA 08-003 Detailed Functional and Interface Standards for NENA (i3) Solution Stage 3. **Authentication, Authorization and Accounting** The responder shall ensure that the system employs authentication, authorization, and accounting for controlling access to computer resources and networks, enforcing policies, and auditing usage. Responders shall describe the authentication, authorization, and accounting functions. The authentication services shall verify the identity of a user before granting access to the network or to any shared resource on the network. The user authentication shall be through a digital certificate, digital signature or password. The responder shall ensure that the system employs authorization services that define what users can do once authenticated and that ensures that, after users have been successfully authenticated, they are granted access to only those resources and can perform only those functions that their security credential provides. The system shall employ accounting services that measure the resources a user consumes during access to include, but not be limited to, the amount of system time or the amount of data a user has sent and/or received during a session.		
6.21.2 Security, Anti-Virus and Patch Management			
6.21.2.1	**Anti-Virus and Patch Management** The responder shall test, validate, install, and manage an anti-virus application in accordance with procedures to be mutually agreed upon by the parties. The response shall describe the proposed Anti-Virus application and shall describe the proposed processes and procedures for the installation and management of the Anti-Virus application. The responder shall identify,		

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	test, validate and install updates no less than once per quarter. The responder shall monitor industry and manufacturer specific notifications for security vulnerabilities and other software and firmware anomalies and apply appropriate measures to eliminate or mitigate such issues in a timely manner following established change management procedures. The responder shall, within sixty (60) days following contract award, submit a customized security plan that addresses the manner in which the responder's security, Anti-Virus, and patch management processes shall be applied to the NG9-1-1 Telephony Platform. The responder will be required to use County of Fairfax data and IT resources. For purposes of this work effort, "County of Fairfax Data" shall mean data provided by the County of Fairfax and/or the County of Fairfax and its secondary PSAPs to the responder, which may physically reside at a County of Fairfax or County of Fairfax or responder location. In connection with County of Fairfax Data, the responder shall implement commercially reasonable safeguards necessary to: • Prevent unauthorized access to County of Fairfax Data from any public or private network; • Prevent unauthorized physical access to any information technology resources involved in the development effort; • Prevent interception and manipulation of County of Fairfax Data during transmission to and from any servers; • Deploy a centralized reporting and monitoring tool; • Provide daily definition updates to the Anti-Virus, Anti-Spam and Anti-Malware solution; and • Deploy a network and CPE auditing tool. The responder shall represent and warrant as follows: • All media on which responder provides any software shall be free from defects; • All software delivered by responder under shall be free of Trojan horses, back doors, and other malicious code; and • The responder has obtained all rights, grants, assignments, conveyances, licenses, permissions and authorizations necessary or incidental to any materials owned by third parties supplied or specified by the responder for incorporation in the deliverables to be developed.		
6.21.2.2	**Security Procedures** The responder shall implement appropriate best-practice security measures that are compliant with any and all applicable federal, state, and local laws, regulations, and guidelines to ensure that the integrity of the system is not compromised. Responders shall describe (1) their own and their proposed sub-responders' respective internal security procedures and policies applicable to work performed by them for customers and (2) the particulars of any circumstances over the past five (5) years in which the bidder or its proposed sub-responder(s) has caused a breach of the security, confidentiality or integrity of a customer's data.		

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	In connection with such data, the winning bidder shall implement the maximum feasible safeguards reasonably needed to: • Ensure the security, confidentiality and integrity of electronic personal data and personal information; • Prevent unauthorized access to electronic personal data or personal information or any other County of Fairfax data from any public or private network; • Prevent unauthorized physical access to any information technology resources involved in the winning bidder's performance of a contract entered under this RFP; • Prevent interception and manipulation of data during transmission to and from any servers; and • Notify the County of Fairfax immediately if any breach of such system or of the security, confidentiality, or integrity of electronic personal data or personal information		
6.21.2.3	**Software Integrity Controls** The responder shall implement the following software integrity controls for the purpose of maintaining software integrity and traceability throughout the software creation life cycle, including during development, testing, and production. The responder shall configure at least two software environments including a development/quality assurance (QA) environment and a production environment. The responder shall implement a change management procedure to ensure that activities in the development/QA environment remain separate and distinct from the production environment. In particular the change management procedure shall incorporate at least the following: • Segregates duties between development and testing of software changes and migration of changes to the production environment; • Implements security controls to restrict individuals who have development or testing responsibilities from migrating changes to the production environment; and • Includes a process to log and review all source control activities. The responder shall implement a source control tool to ensure that all changes made to the production system are authorized, tested, and approved before migration to the production environment. The responder shall not make any development or code changes in a production environment outside of the established change management process.		
6.21.2.4	**Encryption** As recommended by responder, the responder shall apply encryption on all communications to ensure that data cannot be viewed or modified by anyone other than the intended recipient, that data can be validated to confirm its source, and to protect the integrity of a message, ensuring that data is complete and unaltered after being transported over the network. The responder shall describe the method, version, and practical use of the data encryption standard being offered. The responder shall supply, monitor, and maintain the encryption services.		
6.21.2.5	**Intrusion Prevention and Detection**		

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	The responder shall provide active intrusion detection services to inspect general network traffic. The system shall, if a pattern of communications associated with network intrusion is detected, create a log and an alert shall be issued to the network service provider and to the County of Fairfax. The intrusion detection system shall initiate specific responses to certain perceived threats such as blocking traffic or disabling an account after repeated attempts to log in using an incorrect password.		
6.21.2.6	**Disaster Recovery/Business Continuity** The responder shall develop and submit to the County of Fairfax for approval, on or before the date of deployment of the system, a disaster recovery/business continuity plan. The plan shall be invoked in the event of a catastrophic failure or all or a significant portion of the system. Responders shall state whether there is a backup NOC and/or a backup help desk, and if so, shall identify the location of such backup facilities. The disaster recovery plan shall address, at a minimum, the following: • Persons and entities to be notified; • Message(s) to be conveyed; • Actions to be undertaken by the responder in an attempt to mitigate the failure; • Roles, responsibilities, and chain of command for mitigation actions; • Recovery and restart procedures after the cause of the failure has been determined; and • Alternative methods of monitoring or determining the status of the network service should the failure limit the responder's normal methods of monitoring.		
6.22 Training The responder shall provide training services that include a comprehensive training plan identifying the proposed training services, methods, and procedures the responder will deliver for the system both during and after the conversion from the legacy system to the NG9-1-1 Telephony Platform. The responder shall work cooperatively with the County of Fairfax to determine the training materials, curriculum content, and schedule for all training, including without limitation, End User training, PSAP Administrator training, Design Team training, and Operations Supervisor training. Approximate number of end users for training is 160 staff with approximately 30 of that number performing duties as Operations supervisors.			
6.22.1 Training Material			
6.22.1	**Training Material** The responder shall furnish all software, manuals, and audio/visual aids necessary for training on the system. The responder shall provide such materials to the County of Fairfax in an electronic format specified by the County of Fairfax that will permit the County of Fairfax to manipulate and edit such materials. The County of Fairfax shall have the option to customize training and training materials at all phases of program development for any and all training and the responder shall, upon request, review all such training materials for accuracy. Any manuals, software programs and audio/visual training materials created and developed by the responder shall become the sole and exclusive property of the County of Fairfax with rights to copyright and sublicense and shall be subject to the sole and exclusive use, alteration or revision by the County of Fairfax. The		

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	responder shall print and distribute all training materials approved by the County of Fairfax, including without limitation, the materials that shall be distributed at training classes hosted by the responder, as directed by the County of Fairfax.		
6.22.2 Accessibility of Training			
6.22.2.1	The responder shall present the training classes in person at MPSTOC in the Training Academy and not through remote means such as web access services. Training classes will be delivered (where appropriate to the class, example End User Training and Operations Supervisor training) in two sessions each day according to an agreed schedule of dates. The times of each class will be: o Day class- begins at 7am and ends no later than 3 pm o Evening class – begins at 4pm and ends by midnight. Classes would occur four days during the week (Monday through Thursday). The maximum students in any one class will be ten students**.**		
6.22.2.2	**Accessibility of Training** All technical and user documentation and any additional training material delivered by the responder under the contract, and any renewal thereof, shall include alternative keyboard commands that may be substituted for mouse commands, and shall, at the request of the County of Fairfax, be provided in electronic format. Separately, Fairfax County reserves the option to have materials printed in Braille. The number of students per training class shall not exceed ten (10) persons.		
6.22.3 Design Team Training			
6.22.3	**Design Team Training** The responder shall present a plan to provide a comprehensive training class to train, qualify, and certify as needed the County of Fairfax and Design Team staff. The Design team staff will include staff who will coordinate the specific call flows and screen design options (button placement, line types and positioning, screen colors, etc.) for the configuration of the system in Fairfax County. The Design Team will carry through as Subject Matter Experts (SMEs) to provide support during all the End User Training sessions (assisting new trainees understanding how new functions in the system relate to legacy system functions).The number of personnel on the design team will be approximately seven with a total of less than ten students in the training class. At a minimum, the training shall cover network architecture and functionality, database design and functionality, applications and appliances, CPE end user design, functionality and operation. The responder shall also be responsible for training all County of Fairfax System Design Team staff on any and all functionalities and/or call payload types throughout the term of the contract and any renewal thereof. The final phase of Design team training will be a one day knowledge base audit to ensure the Design Team has a correct and complete understanding of the system operation. During		

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	this audit time, feedback is provided to trainers so that they may maximize their effectiveness in presenting material to new students.		
6.22.4 PSAP Administrator Training			
6.22.4	**PSAP Administrator Training** The responder shall present a plan to provide a comprehensive PSAP administrator training class. The responder will propose the length and duration of the class but it would be expected to be at least two days at a minimum. The responder shall provide PSAP administrator training during implementation of any new sites or new equipment installations and as otherwise needed, with the assistance of County of Fairfax as a resource as needed, and determined in the sole discretion of the County of Fairfax. Training shall include any and all site specific configuration/maintenance items to be performed by the PSAP administrators, as identified by the County of Fairfax. This course is oriented to overall system configuration of the system and is targeted to include more technical details about the system operation so that the PSAP Administration team is fully conversant with the components of the system as it is Implemented for Fairfax County. The course should cover configuration of the Console end-user application through to the features that will be used by the PSAP. The course content includes, at a minimum: ○ Introduction / Overview ○ Multi-Agency / Role- Based Planning / Implementation ○ Agent Administration ▪ Adding Agents and Profiles ▪ Selecting Console Permissions ○ Console Configuration ▪ Configuring the Console Workstation ▪ Designing a Layout ▪ Configuring System Sounds ▪ Configuring Contact Manager, Contexts and Speed Dials ○ Genovation Keypad Programming (optional) ○ Basic Enhanced IP Phone Configuration (if applicable and with Technician's assistance) ○ End User Course Content. The Admin course covers all call handling features covered in the Agent course including: ▪ Answering 9-1-1 and admin calls ▪ Call features (hold, park, unpark, transfer/conference, ALI request, abandoned calls, Contact Manager, TTY) and IRR		

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	○ Detail on how the backups/restorations are accomplished and what effects these operations have on the production environment. ○ Advanced ▪ Incoming System Call Flow Process ▪ Outgoing System Call Flow Process ▪ Console troubleshooting ▪ Gateways. Training shall also include a thorough explanation of the operation and maintenance of management information systems supplied.		
6.22.5 End User Training			
6.22.5	**End User Training** The responder shall present a plan to provide a comprehensive CPE End User training class for each enhanced 911 telecommunicator to facilitate the conversion from the legacy system to the NG9-1-1 Telephony Platform. The responder will propose the length of time such training shall last. Such training will be delivered by the responder to the staff at the primary PSAP (Fairfax County) and the staff at all secondary PSAPs on an agreed to schedule. The responder shall also provide such additional training as may be requested by the County of Fairfax with the cost to be negotiated by the parties. At a minimum, the training shall consist of all CPE features as they pertain to 911 functionality and operations such as, but not limited to: ○ Getting Started ▪ Logging On / Off / Starting and Exiting the Console / Main Screen Buttons ○ Basics of Answering 9-1-1 and Administrative Calls ▪ Call Flow ▪ Answering Emergency Calls / Administrative Calls ▪ Call Information Window / Line Button State Indicators ▪ Placing a Call on Hold / Retrieving / ACD Calls / Mute ○ Multiple Participant Features ▪ Transferring / Conferencing / Joining a Call / Using Call Park ▪ Blind vs. Supervised Transfer ○ Additional Features ▪ Performing a Manual ALI Request ▪ Sending ALI to Emergency Response Agency ▪ Automatic Ringback / Accessing Previous Calls ▪ Using Contact Manager / Searching Contacts ▪ Using the Keypad / Redialing Numbers / Handling Abandoned Calls		

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	○ TTY Calls (Emergency and Administrative) ○ Text to 9-1-1 ○ Instant Recall Recording (IRR). The responder shall provide and deliver training to accommodate the deployment schedule. The County of Fairfax will be the sole coordinator of all classes and will determine and secure the training locations based on the deployment schedule. At the request of the County of Fairfax, the responder shall provide refresher training (a four (4) hour class) as necessary to synchronize with the deployment schedule so that enhanced 9-1-1 telecommunicators are trained within two (2) weeks of the conversion of the PSAP or otherwise as may be requested by the County of Fairfax.		
6.22.6 Operations Supervisor Training			
6.22.6	**Operations Supervisor Training** The responder shall present a plan to provide a shorter class for Operations Supervisor to familiarize supervisory personnel with aspects of the telephony system that are not typically used by an End User. The responder shall identify the length of such course. Topics included in the training are best suggested by the responder's knowledge of their product but could include topics such as: ○ Searching the telephony system MIS for investigating details of incoming or outgoing calls ○ Configuration of supervisory information monitors that enable supervisor to track call taker and call flow activity and statistics ○ Operation and use of the MIS ○ General MIS type reporting to facilitate specific supervisory functions (e.g., call volume monitoring and reporting to support planning and staffing levels) ○ Supervisory, first level troubleshooting of perceived issues with the installed system (prior to opening a trouble ticket) ○ Use of backup systems associated with the telephony platform.		
6.23 Migration, Deployment, And Installation			
6.23.1 Migration Plan			
6.23.1	**Migration Plan** Responders shall factor the complete system installation into their response, including but not limited to, the stages identified below. Responders shall provide a complete Project Schedule to include details of the project schedule and associated Deliverables, and Milestones. The County of Fairfax's migration to the Telephony Platform will occur in a series of stages, operating in parallel, as follows: ○ System design and test plan development; ○ Laboratory trial and testing;		

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	○ Pilot deployment to be selected and identified by the County of Fairfax; and ○ Cutover on a rolling basis.		
6.23.2	Responders shall describe how they shall work cooperatively with the County of Fairfax to finalize the migration plan, including without limitation, the following: ○ A detailed transition and migration and deployment plan for the delivery of calls from existing communication service providers to the Next Generation 911 Telephony System. This plan shall accommodate communication service providers that continue to connect via the existing selective routers or to the County through an ESInet; ○ Participation in the transition and migration and deployment planning process and coordination with the existing carriers and for the ESInet; ○ How the bidder shall organize and support a rolling effort with respect to installation, provisioning, and testing; ○ How the bidder shall support the interconnection and integration of two disparate 911 systems—i.e., those working under the new telephony and those not yet cut over from the legacy system (i.e., secondary PSAPs). ○ Cutover planning and fallback, if required. The responder shall submit a fallback plan that shall detail the roll back process.		
6.23.2 System Installation			
6.23.2	**System Installation Quality Assurance Requirements** The responder shall design and establish a quality control system and procedures to ensure that hardware and software supplies and/or services meet the quality standards specified in this RFP. The quality control system, including procedures, shall be subject to the prior approval of and shall also be subject to inspection by the County of Fairfax. The quality control system shall ensure that adequate control of quality is maintained throughout all areas of contract performance, including without limitation, the receipt, identification, stocking, and issuance of material, the entire physical process of manufacture, packaging, shipping, storage, installation, and maintenance, and processes of software development, design structure, coding, testing, integration, and implementation. All equipment, supplies, and services provided under the contract, whether manufactured or performed at the responder's facility or at any other source, shall be subject to control at such points as necessary to ensure conformity with the specifications and contractual requirements. The system shall provide for the prevention and ready detection of discrepancies and for timely and positive corrective action. The responder shall provide objective evidence of quality performance to the County of Fairfax upon request.		
6.23.3 System Testing			
6.23.3	**System Testing** The responder shall develop and shall submit to the County of Fairfax for approval a comprehensive test plan for the system, the network, for each functional element of the system, and for each PSAP, that addresses, at a minimum, the following test procedures. The responder shall apply the following acceptance test procedures to the individual systems as they are installed and prior to any live operation. The responder shall also apply test procedures to the system prior to providing final system acceptance.		

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	The comprehensive test plan shall address, at a minimum, the proposed test environment, test facility, test equipment, test configuration, test thresholds, test call simulators, and test documentation. The responder shall provide to the County of Fairfax for its approval documentation that demonstrates that the applications, appliances, and CPE for the system are ready for testing. The County of Fairfax reserves the right to inspect the test equipment, applications and appliances, and CPE have been properly configured and installed. The responder shall refine and resubmit the system design and technical documents to reflect results of system testing.		
6.23.4 ESInet Test Procedure			
6.23.4	**ESInet Test Procedure** The responder shall design, conduct, pass, and document a thorough test procedure for the PSAP network (local ESInet) connecting any host telephony system and remote nodes connected to the host system and network monitoring components of the system. This test plan shall at minimum, confirm that these components meet the specifications in the RFP as well as any other requirements necessary for the compliance with applicable NENA i3 standards, rules, and regulations. This shall include, but not be limited to, tests for: • Data Center end-to-end connectivity of all circuits; • Throughput per the Throughput Acceptance Test (Requirement 6.23.6); • Packet loss; • Latency; • Jitter; • Routing; • QoS mechanisms; • Fault recovery; • Fail-over from primary to secondary paths; • Simulation of peak traffic load for a minimum of twenty-four (24) hours; • Network monitoring systems; • Faulty notification systems; • Firewalls, intrusion detection systems, intrusion protection systems; and • Data Center network connections to third parties (LEC's, Internet, etc.)		
6.23.5 Throughput Acceptance Test			
6.23.5	**Throughput Acceptance Test** The responder shall design, conduct, pass, and document system throughput performance tests for the system and each of its components and subsystems. These tests shall verify that the installed system and subsystems shall meet the expected throughput capability and provide the expected operational speed and growth potential. The amount of throughput to be tested shall be based on the peak number of transactions experienced by Fairfax County, combined with the responder's		

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	claim for system throughput capability. The responder shall execute and provide a standard benchmark test based on peak load characteristics with a transaction rate corresponding to the system loading information. The throughput test shall exercise each component of the system. Shall any failures be identified during the performance test, the responder will have a reasonable opportunity to correct the deficiencies, after which a retest may be scheduled. The County of Fairfax, at its discretion, may require a retest of the failed functions or may elect to require a complete retest. This process will continue until all functions have passed or the system fails to provide the throughput required by the County of Fairfax. Responders shall provide details in the proposal(s) on how acceptance tests will be conducted. Final agreement on test procedures will be accomplished during contract negotiations. System throughput testing shall last for a minimum of twenty-four (24) hours and shall involve sufficient transactions, simulating 200% peak traffic load, to validate the capabilities of the systems. All subsystems will be exercised during this test. Delays caused by external systems will not be considered a cause for failure. The system shall not crash due to a transaction overload.		
6.23.6 Functional Acceptance Test			
6.23.6	**Functional Acceptance Test (ATP)** The responder shall conduct a functional acceptance test to verify that the systems installed provide the expected functional capabilities in accordance with the design criteria for the system. The responder shall demonstrate to the satisfaction of the County of Fairfax that each function and option operates according to the design documentation, including the RFP, and applicable standards. Shall any failures be identified during the test, the responder will have a reasonable opportunity to correct the deficiencies, after which a retest may be scheduled. The County of Fairfax, at its sole discretion, may require a retest of the failed functions, or may elect to require the responder to conduct a complete retest. This process will continue until all functions have passed or it becomes obvious that the system under test will not support one or more functions that it was designed to accomplish. At this point, the County of Fairfax may negotiate a settlement with the responder, or may take other steps as deemed appropriate. Proposals shall include a proposed initial acceptance test plan (ATP) for demonstrating the system functions. The ATP shall be subject to the approval of the County of Fairfax.		
6.23.7 Installation Support			
6.23.7.1	**Installation Support** The responder shall provide specialized technical service personnel to provide support in all areas of the project by site as described in Figure 3, to include but not be limited to, communications, computer hardware and software, equipment service and repair, as required by the project work plan. All technical service personnel shall be fully qualified in their respective disciplines. All costs associated with the provision of the technical support services, if any, are to be included in the proposal.		
6.23.7.2	**Description of Procedures** The responder shall provide and maintain a description of procedures for quality control. To the extent necessary, written inspection and test procedures shall be prepared to supplement the applicable drawings and specifications, and shall make clear the manner in which such inspection and test procedures are to be used.		

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6.23.7.3	**Quality Control Records** The responder shall maintain adequate records of inspections and tests throughout all stages of contract performance, including checks made to ensure accuracy of inspection and testing equipment and other control media. All quality control records shall be available for review by the County of Fairfax, and copies of individual records shall be furnished to the County of Fairfax upon request. The responder shall furnish records requested within ten (10) business days of the request.		
6.23.7.4	**Corrective Action** The responder shall take prompt action to correct conditions that might result in defective supplies or services. The responder shall make use of feedback data generated and furnished by user activities, as well as that generated in the responder's facility.		
6.23.8 Resistance to Interference and Emissions			
6.23.8.1	**Resistance to Interference** The system shall not suffer from interference or measurable performance degradation from use of installed console devices, public safety radio transceiver equipment, microwave communication systems, other installed data processing equipment, or any other devices present in the system's operational environment.		
6.23.8.2	**Emissions Criteria** The system shall not cause interference to the existing radio, security, or closed circuit television communications systems, installed communications console equipment, or other data processing equipment present in the operational environment, and, in addition, shall comply with all applicable FCC standards as applied to data processing equipment.		
6.23.9 Responsibility for Responder Equipment			
6.23.9	**Responsibility for Responder Equipment** Responders shall assume complete responsibility for all tools, test equipment, or other items that are the property of the responder and are being used during equipment installation. The County of Fairfax will not be responsible for lost or damaged items that the responder may leave at work sites for their own convenience.		
6.23.10 Site Cutover Project Plan and Advance Notification Documentation			
6.23.10.1	**Site Cutover Project Plan and Advanced Notification Documentation** For each PSAP (Fairfax County MPSTOC, Pine Ridge Alternate Center, Town of Herndon, Town of Vienna, City of Fairfax) and the MPSTOC Academy training center, the responder shall provide the County of Fairfax with a Site Cutover Project Plan beginning with the initial site survey visit and culminating with the site acceptance. The responder shall include in the plan a chronology of the work activities that will occur at the PSAP/training center as well as the identity and role of the subcontractors who will be on-site and the tasks they will be performing. The responder shall include in the plan an outline of the events that will occur on a daily basis, and a procedure for taking the PSAP offline for said work, if necessary, and a list of the responsibilities of PSAP staff in connection with the cutover. The responder shall also provide in this plan a backup procedure to ensure that all vulnerable data has been appropriately backed up after all configurations are final, which shall be completed prior to the scheduled cutover date.		

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	The County of Fairfax will coordinate with the PSAP (where necessary) and the responder the initial site visit at least sixty (60) days prior to cutover. During the initial site visit the following items, at a minimum, will be discussed: • Site Cutover Project Plan; • Electrical requirements; • Individual Site configuration; • PSAP responsibilities; and • Location of circuits and equipment. The responder shall provide the County of Fairfax with a copy of the notes from the initial site visit before any installation can commence on the identified changes. The County of Fairfax representative shall conduct periodic site visits to check on the status of the cutover. The PSAP administrator or designee shall be available during the cutover to address any site-specific questions from the responders.		
6.23.10.2	**Staging Requirements** The responder shall provide a staging process for the installation of new CPE and shall perform the following steps as part of that process: • Install and configure all components for each PSAP or training academy in a staging area designated by the responder; • Power on equipment, verify configuration settings and burn system in for a minimum of seventy-two (72) hours. The County of Fairfax shall have access to staging area for inspection at any time.		
6.23.10.3	**Full System Staging Test** The responder shall, at least forty-eight (48) hours prior to the installation at the PSAP, provide the County of Fairfax with the results of the full system staging test that describes any component failures encountered and on what test attempt the system passed the test. Staging shall include configuration work for site specific configurations. The full system staging test documentation shall include all the test steps identified in the pre-cutover test portion of the functionality checklist with the addition of pass/fail metrics, measurement criteria used to determine pass/fail metrics, and the results of all system test procedures conducted by the responder during staging. Such documentation shall include the number of times the system was tested, on what attempt the system passed, and the repairs performed to address test result failures. The responder shall: • If a component fails, replace the component or resolve the issue through other appropriate means; • If the replacement fails or similar component fails, refer the issue to the Technical Support team of the manufacturer of the component for review and repair; • If a component failure is encountered during testing and the component is considered a system- wide resource, restart full system test once the repair is made; and • If the component is a single isolated component such as a workstation, Restart testing		

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	related to the workstation. If any section of the pre-cutover test is not successfully completed, the planned cutover may be postponed at the election of the County of Fairfax upon notice to the responder. If postponed, the responder shall be required to reschedule the cutover date to another date approved by the County of Fairfax. **Cutover Testing** The responder shall successfully complete cutover testing on the planned cutover date based on an agreed upon functionality checklist in order for the cutover to take place. The responder shall document its activities in connection with the checklist, including pass/fail metrics, measurement criteria used to determine pass/fail metrics, and the results. The responder and the County of Fairfax shall jointly conduct the cutover day testing.		
6.23.10.4	**Post-Cutover Testing** After the cutover is completed, a post-cutover test shall be conducted to ensure that all systems and functions are performing based on an agreed upon post-cutover checklist. The responder shall document its activities in connection with the checklist, including pass/fail metrics, measurement criteria used to determine pass/fail metrics, and results. If any section of the post-cutover test is not successfully completed, the County of Fairfax may halt the testing. The responder shall be required to immediately repair the problem. Post-cutover testing shall re-commence only at the direction of the County of Fairfax's order following notification from the responder that the problem has been repaired. If the problem(s) cannot be repaired within four (4) hours of the start of the post-cutover testing, the County of Fairfax may halt the cutover until the problem can be repaired satisfactorily. In the event of a post-cutover test failure, the County of Fairfax shall determine whether additional testing is required. The responder shall provide any additional testing required by the County of Fairfax.		
6.23.11 Waste Disposal			
6.23.11	**Waste Disposal** The responder shall be responsible for the removal of any and all packing or other materials associated with the delivery and/or installation of any and all system components at the PSAPs and any data centers.		
6.24 Acceptance or Rejection Process The responder shall submit the required deliverables specified in this RFP to the County of Fairfax for approval and acceptance. The County of Fairfax shall review work products for each of the deliverables and evaluate whether each deliverable has clearly met in all material respects the criteria established in this Agreement. Once reviewed and favorably evaluated, the deliverables will be deemed acceptable. Acceptance of the work of the responder shall not preclude the County of Fairfax from requiring strict compliance with the contract, in that the responder shall complete or correct upon discovery any faulty, incomplete, or incorrect work not discovered at the time of acceptance.			
6.24.1 Final Acceptance Testing			

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6.24.1	Final acceptance testing confirms that the solution operates during day to day use in a live environment. The testing period must be sufficient to demonstrate the solution's performance and reliability. The period shall be 30 consecutive calendar days. Contract deliverables must perform in compliance with all RFP and contract requirements throughout the testing period. Should a failure to comply occur: 1. Fairfax County will provide a written notification to the Responder. 2. The Responder shall remedy the non-compliance per the *Service Levels Agreement Section* (Section 6.28) and provide written notification of the remedy to Fairfax County. 3. The final acceptance testing period will restart from Day 1 upon Fairfax County's written notification of acceptance of the remedy; or 3 business days; whichever is less. 4. This procedure continues until compliance over the testing period is achieved. At which time the contract deliverables are deemed fully accepted and the acceptance notice (to be defined in the test plan) will be mutually executed. **Final Acceptance or Rejection of Site Cutovers** After the PSAP has operated for thirty (30) calendar days at full functionality with the new CPE, the responder shall provide the County of Fairfax with a Cutover Acceptance Report that shall contain all trouble tickets created since the cutover and additional performance metrics as agreed to by the parties. The County of Fairfax shall verify the level of functionality by reviewing the trouble tickets and performance metrics and conducting a site inspection within fifteen (15) days after it receives the Cutover Acceptance Report that contains the trouble tickets and performance metrics. Once the County of Fairfax performs this inspection, if it is satisfied with the performance level of the PSAP, it will sign the Cutover Acceptance Report. The Site Acceptance Date shall be the date of execution of the Cutover Acceptance Report by the County of Fairfax. The responder shall remove the legacy 911 CPE from the PSAP within ten (10) business days of the Site Acceptance Date. The responder shall notify the County of Fairfax upon completion of said work and the 911 Department will inspect the site.		
6.24.2 Site Cutover Acceptance Package			
6.24.2	**Site Cutover Acceptance Package** Following acceptance of the cutover of a PSAP or by the County of Fairfax, the responder shall submit the following information to the County of Fairfax for each such accepted PSAP or training center: • CPE inventory, including a complete list of installed equipment that identifies, at a minimum, manufacturer name, serial numbers, and part numbers, for the installed equipment; • Sales configurations and associated change control request orders; • Software Inventory Document; • Cutover Acceptance Report; • Pre-cutover test checklist;		

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	• Post-cutover test checklist; and • Any other information as mutually agreed to by the parties.		
6.24.3 Acceptance of Other Deliverables			
6.24.3	**Acceptance of Other Deliverables** Within ten (10) business days of receipt of each Deliverable (other than for PSAP , the County of Fairfax will notify responder, in writing, of the acceptance or rejection of said Deliverable using any predefined acceptance criteria or the requirements of this RFP and criteria associated with the Task or Deliverable specifications. A form signed by County of Fairfax shall indicate acceptance. The responder shall acknowledge receipt of acceptance forms in writing. Any rejection shall include a written description of the defects of the deliverable. If County of Fairfax does not respond to the submission of the Deliverable, within five (5) business days of the County of Fairfax's receipt of each Deliverable, the responder shall provide a reminder notice to the County of Fairfax. If the County of Fairfax fails to reject a Deliverable within five (5) business days after County of Fairfax's receipt of the reminder notice, the Task or Deliverable is deemed accepted. If the County of Fairfax rejects a Deliverable, the responder shall, upon receipt of such rejection, act diligently to correct the specified defects and deliver an updated version of the Deliverable. The County of Fairfax shall then have an additional five (5) business days from receipt of the updated Deliverable to notify the responder, in writing, of the acceptance or rejection of the updated Deliverable. Any such rejections shall include a description of the way in which the updated Deliverable fails to correct the previously reported deficiency. Following any acceptance of a Deliverable which requires additional work to be entirely compliant with the pertinent specifications, and until the next delivery, the responder shall use reasonable efforts to provide a prompt correction or workaround.		
6.24.4 De-Installation of Legacy CPE			
6.24.4	**De-Installation of Legacy CPE** As authorized by the County of Fairfax in connection with site cutovers and otherwise at the request of the County of Fairfax, the responder shall de-install any and all legacy CPE, including without limitation, servers, cabling workstations, interfaces, etc., to be stored in a location on-site at the PSAP or such other location to be designated by the County of Fairfax. All such work shall be performed under oversight by the County of Fairfax.		
6.25 PSAP Equipment Inventory			
6.25.1 PSAP and Data Center Equipment Inventory			
6.25.1	The responder shall provide a list of any and all newly installed components and the associated serial numbers of PSAP and data center equipment to the County of Fairfax. The responder shall maintain for each PSAP and data center, a serial number database and shall promptly update such database whenever a hardware component is changed or new PSAP CPE or data center equipment is added. An electronic copy of this database in an Excel or Access format shall be provided to the County of Fairfax annually and as otherwise requested by the County of Fairfax. For the duration of the contract, the responder shall		

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	maintain as current and supply to the County of Fairfax annually and upon request an As Built diagram, including CPE and data center configuration and cabling details.		
6.25.2 Circuit Id Inventory			
6.25.2	The responder shall provide a list of all circuit IDs and their use for each connection and shall identify where the circuit(s) is connected, including the 'a' and 'z' end locations. The responder shall maintain an inventory of all circuit IDs, and the responder shall promptly update this database whenever a circuit is changed, moved, or added. The responder shall promptly notify the County of Fairfax of all changes in circuit. An electronic copy of this database in an Excel or Access format shall be provided to the County of Fairfax annually and as otherwise requested by the County of Fairfax.		
6.25.3 Inventory Management			
6.25.3	The responder shall maintain an inventory management system and database. Responders shall describe the inventory management system in detail. The inventory management system and database shall provide the County of Fairfax with access to inventory management reports, and shall provide the County of Fairfax with the ability to create ad hoc reports.		
6.26 Electrical, Wiring, And Cable			
6.26.1 Electrical Standards and Surge Protection			
6.26.1.1	All devices shall be provided with any and all necessary connecting cords and cables conforming to National Electrical Manufacturers Association (NEMA) codes.		
6.26.1.2	The system shall correctly employ surge and lightning protection for all connections to AC power as well as to communications facilities such as plain old telephone service, 911 trunks, T1/DS1, wireless antennas, etc.		
6.26.2 Wiring and Cabling and Grounding			
6.26.2.1	**System Cabling –** This project will require the cooperation of the County of Fairfax, the County of Fairfax's IT Department and the responder. The responder shall identify all necessary embedded and visible interconnect cabling necessary for system operation, including all peripheral devices located within the PSAPs, connecting remote workstations with the central servers. The LAN/WAN system requirements shall be included in the RFP response. Responders shall indicate preferred communications devices and configuration within their response, based upon proven experience with this equipment. All cables, regardless of length, shall be clearly marked and/or numbered in a manner that reflects a unique identifier of the cable at both ends. Marking codes shall correspond to recognized standards and specifications and be consistent throughout the project. Such markings shall become integral to the overall as-built detail. All cabling shall be neatly laced, dressed, and/or adequately supported. Cable shall be plenum rated where required by local building or fire codes. No splices will be allowed in system wiring other than at approved designated locations, and with approved devices.		

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	The responder shall install the equipment and connect the units to commercial/emergency AC power and uninterruptible power sources. The responder shall connect County of Fairfax-furnished equipment to the responder-supplied equipment and install bonding and grounding conductors where needed. The proposal price shall include installation hardware, brackets, braces, fasteners of all kinds, wiring, ancillary devices, procedures, and services required to install and/or interface components to provide a complete operating system that fulfills the requirements of this RFP. The responder shall adhere to FCC and all local codes and ordinances in all matters pertaining to the work. Cabling, communications outlets, power wiring, system grounding, conduit facilities, and equipment rooms shall be installed in accordance with national standards and national and local codes. All equipment and component parts installed shall be new, shall meet the requirements of this specification, and shall be in operable condition at the time of delivery. The installation work shall be approved by the County of Fairfax prior to commencement of a particular phase of work on a site-by-site basis. The responder shall provide descriptions and layout drawings showing the proposed installations at each site at least fourteen (14) days prior to beginning work at that site. All aspects of the installation shall be planned and executed in a professional manner. The responder shall coordinate access to the sites with the County of Fairfax.		
6.26.2.2	**Grounding** All hardware and peripheral devices shall be mechanically and electrically grounded to prevent both user hazard and loss of data or hardware integrity due to external electrical impulse. The responder shall demonstrate knowledge of local storm and lightning phenomena, and show such methods of protection in selection of local data transmission mode (i.e., shielded cable, fiber optics, etc.). The responder shall ground all equipment installed by the responder as specified in applicable standards by Fairfax County. The responder shall ground all equipment in compliance with manufacturer recommendations and applicable standards. This shall include, but is not limited to, all servers, network equipment, appliances, metal conduit trays, cabinets, chassis, shelves, and transmission lines provided under this RFP. The responder shall furnish and install the required grounding and bonding conductors and make connections to the grounding system at PSAPs and other sites.		
6.27 Warranty, Maintenance, And Monitoring			
6.27.1 Design and Operation			
6.27.1	**Design and Operation** The responder represents and warrants that the equipment, components, and services sold or provided in response to this RFP shall perform in accordance with their respective design specifications, and shall operate in accordance with the manufacturer's published specifications when operated and maintained in accordance with the manufacturer's recommendations for a minimum of one (1) year from their final acceptance by the County of Fairfax.		
6.27.2 Configurations			

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6.27.2	**Configurations** The responder represents and warrants that the configurations of equipment and services proposed in response to this RFP represent sound design principles and best practices being applied to provide a total system solution to the requirements stated in the RFP and referenced standards, and that the equipment and services provided shall operate together in a manner to perform the functions expressed in the RFP.		
6.27.3 Equipment Models			
6.27.3	**Equipment Models** The responder represents and warrants that the equipment offered is standard new equipment, and the latest model of regular stock product, with parts regularly used for the type of equipment offered, and also that no attachment or part has been substituted or applied contrary to manufacturer's recommendations and standard practice. The responder shall furnish the current version of software or firmware for all systems provided. If a new version or release is issued after contract execution, but prior to the shipment of the system, then the County of Fairfax shall have the option of substituting the new version or release in place of the originally proposed version or release, at no additional charge, after testing.		
6.27.4 Product Life Cycle			
6.27.4.1	**Product Life Cycle** The responder represents and warrants that the system components, including without limitation, the CPE, applications and appliances, data center equipment, are not currently near the end of their product life cycle. Responders shall submit a statement identifying the length of time from site acceptance that responder shall guarantee new (not reconditioned) parts availability. The responder shall describe in detail the life expectancy of the system and system components. The life expectancy shall be a minimum of five (5) years from site acceptance. Responders shall detail the costs to upgrade the system components throughout the term of the contract for the total anticipated contract duration, including renewal options. Responders shall provide a detailed schedule of hardware refreshes.		
6.27.4.2	**Software Upgrades and Documentation** Responders shall describe how they propose to provide operating system and/or software upgrades without adversely impacting service availability or performance. When software updates or enhancements become available, the responder shall notify the County of Fairfax of such availability as soon as possible following the manufacturer's release announcement. The responder will provide an explanation of the new capabilities of the software upgrade (operating system, application software, etc.) and any other impacts the software will have on operations . The County of Fairfax shall then have the opportunity to request installation of the new software, which shall be installed by the responder at no charge to the County of Fairfax. However, when such software releases are intended by the manufacturer as generic version updates to correct reproducible and/or recurring defects (software bugs), these releases shall be installed by the responder upon prior approval by the County of Fairfax at no charge to the County of Fairfax. Software updates for this system shall be supplied for the duration of the contract utilizing defined change management protocols.		

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	The responder shall provide the County of Fairfax with a comprehensive inventory of all current release versions which shall include any operating systems and application software, in a document entitled "Software Inventory." Prior to delivery of the CPE at the PSAP, the responder shall install the latest software versions and/or patches applied to all components of the system. These latest versions shall be mutually agreed upon by the County of Fairfax and the responder. The responder shall provide a checklist, previously verified by the County of Fairfax, to technicians performing the installations, to be used by the technicians to verify that the software versions installed are those that were mutually agreed upon by the County of Fairfax and the responder.		
6.27.4.3	**Configuration Documentation and Changes** The responder shall provide the County of Fairfax with configuration documentation in a mutually agreed upon format. The responder shall provide the County of Fairfax with a standard change management document that will describe any software or hardware system or manufacturer default setting changes that are implemented by the responder in the staging facility. Any change shall be approved by the County of Fairfax prior to the execution of a change. The responder shall, if the standard change management document is updated or revised, promptly provide to the County of Fairfax with a new version of the change management document. The responder shall follow industry standards best practices such as ITIL or the equivalent, and shall maintain a change management database that can be accessed by the County of Fairfax.		
6.27.5 System Documentation			
6.27.5	**System Documentation** For each system, subsystem, and each type of equipment supplied, the responder shall provide an electronic copy, and upon the request of the County of Fairfax one complete printed set of maintenance manuals and/or technical documentation at the time of installation, with revised, final documentation provided within ten (10) business days after installation. Each piece of electrical equipment installed shall have a maintenance manual that depicts circuit diagrams, as well as proper unit assembly and installation. All drawings and maintenance manuals shall include all modifications and revisions made to the original drawings, and completely reflect the final layout and configuration of all installed hardware. The responder shall provide computer file copies of system layout and interface/interconnection point diagrams. Diagram files shall be provided in Visio file format and reflect the "as built" state of the system for the life of the contract. Any and all such documentation shall allow for the County of Fairfax to copy information for import into the County of Fairfax's records. This and all other system documentation shall be promptly delivered to the County of Fairfax.		
6.27.6 Warranty Period and Equipment Replacement under Warranty			
6.27.6.1	**Warranty Period** The responder represents and warrants that the system, including all hardware and software, shall operate in conformance with the specifications for the system and shall be free from defects in materials and workmanship, for a period of one (1) year from site acceptance. This shall consist of a complete warranty covering all parts, labor, travel and all other expenses. The responder represents and warrants that the responder shall modify, adjust, repair, and/or replace said system as the County of Fairfax deems it to be necessary or appropriate to have the system perform in full accordance with the terms and		

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	conditions of the contract. Warranty repairs on all furnished equipment, systems and software shall be made at no cost for a period of one (1) year from the date of site acceptance. Responders shall describe how system and equipment maintenance and repair will be handled during the warranty period. During the warranty period, the responder shall resolve to Fairfax County's satisfaction all repair calls or notices of system malfunction at no additional cost to the County of Fairfax. The responder shall be responsible for any shipping costs incurred to send components to manufacturers for repair or replacement. The County of Fairfax reserves the right to closely monitor and observe warranty repair service. During the warranty period, the responder shall maintain adequate staff and spare parts inventory to ensure prompt warranty service. **Maintenance Following End of Warranty Period** After the one (1) year warranty has expired, the responder shall provide maintenance services on a 24 x 7 basis under the same terms and conditions as described in the Service Level Agreement for this RFP. Any sub-responder costs for the first-year warranty of any system hardware or software component covered under the above warranty requirements shall be included within the base system proposal price. The County of Fairfax shall pay no maintenance costs during the warranty period.		
6.27.6.2	**Equipment under Warranty Replacement** During and after the warranty period, any equipment that must be replaced as a result of conditions covered under warranty shall be replaced with new equipment of the equivalent or better make and model.		
6.28 Service Level Agreement (SLA)			
6.28.1 Service Level and Service Management Performance Standard			
6.28.1.1	Services referenced here are limited to those provided under the agreement. All times are averages over a rolling twelve (12) month measurement period. There are provisions for declaring a Service Level Agreement (SLA) violation in cases where repeated instances occur over a short period of time. All time intervals are calculated to the nearest minute.		
6.28.1.2	The performance standard is a criterion for measuring acceptability, quality, or accuracy of the successful Respondent's performance for contracted services. Respondents must identify the SLAs and metrics for the System components (i.e., Network, security, NG9-1-1 functions and services, circuits, system availability, etc.) that will be utilized to formulate the system performance measurements for each performance standard identified in this section.		
6.28.1.3	Regular Business Hours (RBH) are defined as the hours between 8:00 A.M and 5:00 P.M Eastern Standard/Daylight Time		
6.28.2 SLA Reporting			

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6.28.1	The responder shall provide access to a ticketing system for the County of Fairfax to report troubles and to manage and track open troubles.		
6.28.2	On a monthly basis, the successful Respondent must measure the performance of the System to determine if the performance standards have been met. The respondent shall provide a measurement and reporting mechanism which must be mutually agreed by Fairfax County as part of contract negotiations. The report must include, at a minimum, all performance items identified in Section 6.28 of the SLA.		
6.28.3 Definitions of Trouble for Service Levels			
6.28.3	**Critical Trouble** - A condition in which a system function, workflow or process problem results in: • The degradation of the ability of users to handle PSAP center calls or to utilize administrative capabilities to properly manage PSAP operations. Degradation of ability is defined at the sole discretion of Fairfax County operations management. • Loss of redundancy such that loss of the surviving element would result in significant degradation in the inability to process calls (e.g., loss of redundant ALI service, loss of geographical redundancy for core services). **Major Trouble** - A condition in which a system function for PSAP call processing or utilization of administrative telephony capabilities is significantly affected (e.g., inability to utilize critical workstation). **Minor Trouble** - All problems not classified as Critical or Major.		
6.28.4 Response Time			
6.28.4	**Response Time** Response time is the interval between a trouble ticket being created and when a qualified resource is actively involved in addressing issues recorded in a trouble ticket. A qualified resource shall acknowledge requests for assistance from Fairfax County via phone and the responder shall commence investigation (on-site or remote access) of the trouble within the timeframes in the Response Time table below.		

Response Time		
Trouble Category	Regular Business Hours	Outside Regular Business Hours
Critical	15 minutes	30 minutes
Major	30 minutes	1 Hour

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	Minor | Next Business Day | Next Business Day		
6.28.5 Repair Time			
6.28.5	**Repair Time –** Repair time is the interval between a trouble ticket being created and the technology issue being resolved and all functions restored to normal or an acceptable workaround is in place. Issues documented via the ticketing process will be resolved. Resolution may be either the final repair which returns the system to its normal functioning condition or a Fairfax County accepted workaround accompanied by a plan to achieve the final repair. Within forty-eight (48) hours of the restoration of the critical system malfunction, the responder shall provide the County of Fairfax with an Incident Report and shall provide in that Incident Report: (1) a root cause analysis of the event, an estimated date by which it will submit to the County of Fairfax a root cause analysis of the event, or an explanation of why a root cause analysis is not possible, and (2) a plan to prevent the specific problem identified in the root cause analysis from occurring at all other operational PSAPs and or data centers with the necessary repair, or the estimated date that such plan will be submitted to the County of Fairfax.		
6.28.6 Escalation			
6. 28.6	**Escalation -** In cases where an escalation interval (see Escalation Interval table below) has elapsed from the time the ticket was created, an automatic escalation for additional assistance to the next higher level of technical support must be executed. Once an escalation has occurred the Responder will provide Fairfax County with a status update on an agreed interval until resolution.		

Repair Time

Trouble Category	Repair Time
Critical	1 hours
Major	4 hours
Minor	48 hours

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	Escalation Interval (elapsed time since ticket creation) Trouble Category: Critical — Interval: 30 minutes Trouble Category: Major — Interval: 1 hour Trouble Category: Minor — Interval: 48 hours		
6.28.7 SLA Violations and Damages			
6.28.7.1	SLA Violations - An SLA violation shall have occurred whenever: • The Responder fails to meet any single performance level or; • The average any single performance item over the preceding two (2) month period fails to meet the service level. This is an "early warning" of an unacceptable trend.		
6.28.7.2	SLA Violation Damages - Damages shall apply whenever: • Any single performance item SLA violation occurs two consecutive months. • Any single performance item SLA violation occurs the month following an occurrence of SLA violation per number 2 in Section 6.28.2 of this document (the "early warning" violation). Damages are calculated as 10% of monthly recurring charges (MRC) due the Responder for network connectivity, maintenance or managed services as appropriate. The amount related to the damages is to be credited to the Fairfax County invoice the month immediately following the violation.		
6.28.8 Network Management and Monitoring			

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6.28.8.1	The Responder must staff a Network Operation Center (NOC) to monitor the network and meet the service levels stated within this RFP. The responder shall provide overall performance monitoring of the entire system as part of the initial warranty and any subsequent maintenance.		
6.28.8.2	Within sixty (60) days of contract award, the responder shall develop and submit to the County of Fairfax for approval an operations manual that outlines for Fairfax County personnel an understanding of how to interact with the NOC and help desk. Included in the manual, as examples, would be Fairfax County procedures for reporting troubles, Contact numbers for Fairfax County to use to report troubles, Fairfax County procedures for accessing any ticket system proposed by the responder, a description of what Fairfax county can expect to happen when a problem or trouble is reported (e.g., the process of handling the trouble), how Fairfax County will know when responder personnel are accessing the system for troubleshooting and how will Fairfax County know when the system is no longer being accessed for troubleshooting, procedures for escalating trouble report, etc.		
6.28.9 Monitoring of Applications, Appliances, and CPE for 9-1-1 Telephony Operations			
6.28.9.1	The responder shall monitor all components of the system, at all locations (County and secondary PSAPs), 24 x 7 to immediately identify potential problems or outages and shall make necessary notifications consistent with notification procedures established by the County of Fairfax. The responder shall isolate and repair all identified problems. The responder shall provide an escalation plan and procedures to ensure service response times.		
6.28.9.2	The responder shall ensure that all alarms shall also be received and monitored. The responder shall have the capability of performing remote maintenance to further investigate alarms or restore alarms. The responder shall monitor all ports, inbound and outbound, on the border control functions.		
6.28.10 Software Upgrades			
6.28.10.1	The responder shall provide the County of Fairfax with notification of software or equipment updates and modifications via a product change notice, technical service bulletin, or a new product announcement. The notification shall explain in non-technical terms what the software upgrade or modification provides and explain the areas of impact the change will affect. The County of Fairfax shall, in its sole discretion, determine whether the updates or modifications are required. If the County of Fairfax determines that the product update or modification is required, the responder shall provide the pre-release notification, including a step by step installation process that contains backup procedures of all critical data consisting of configuration settings, installation procedure and a back out procedure.		
6.28.10.2	Prior to deployment of new software upgrades or fixes, the responder shall document that the required testing as described herein has been completed. The responder shall invite representatives of the County of Fairfax to attend all aspects of the testing. After testing of the upgrade or modification process has been completed and the results of such testing have been fully disclosed to the County of Fairfax, the County of Fairfax shall make a final decision as to whether to accept the upgrade or modification. If accepted, the responder shall provide a proposed roll-out schedule for the upgrade or modification to the County of Fairfax, and following approval of the schedule by the County of Fairfax, shall begin the roll-out with the County of		

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	Fairfax. The responder shall ensure that the step by step installation process referred to above is strictly adhered to at all sites.		
6.28.10.3	In cases where a software issue is identified at a specific site where a code change is required, the responder shall provide a pre-release notification. The responder shall identify to the County of Fairfax versions of firmware or drivers if there are specific modifications for that firmware or driver. The responder shall provide the County of Fairfax with a standard change management document that will describe any software system or manufacturer default setting changes that are implemented by the responder. The responder shall promptly provide the County of Fairfax with any and all updates to the standard change management document.		
6.28.11 Help Desk			
6.28.11.1	**Help Desk Availability** Throughout the term of the contract and all renewals thereof, the responder shall operate a help desk for the purpose of receiving, logging, tracking, dispatching, and reporting on trouble calls. The help desk shall be fully operational, reachable via an agreed telephone number, and staffed on a 24 x 7 basis. There shall be responder supervisory staff available to the the help desk staff on a 24 x 7 basis. The help desk shall be located in the United States. The help desk shall be adequately staffed so that calls to the help desk are answered by live help desk staff that are trained and qualified on the systems and services furnished under this RFP. Calls shall not be answered by an automated attendant or other automated means. The help desk shall serve as a single point of contact for PSAPs for all matters, including without limitation, the system and all components of the system. The help desk shall have the ability to communicate directly and immediately with maintenance and support services for the system and all components of the system, including without limitation, network troubles. The help desk shall have the authority to dispatch maintenance staff from all responders, manufacturers, sub-responders and other entities responsible for any components or services contracted for through this RFP. The responder shall dispatch staff in a timely manner to meet the response time requirements stated in the RFP. The responder shall provide a dedicated toll-free 24 x 7 service number to respond to troubles relating to the system or any components of the system. When reported 911 system troubles or failures are received, the responder shall open a trouble ticket and shall prioritize and isolate the trouble. The help desk shall direct, prioritize, escalate, and oversee the repair of any and all reported 911 system failures and/or trouble tickets. The responder shall provide specially trained technicians to proactively identify problem areas impacting the quality of service and to serve as the liaison between the PSAPs and the responder. The help desk shall open a ticket for all calls received. Any and all troubles that do not fall under the direct responsibility of the responder shall be forwarded to the appropriate party. The responder shall provide access to a ticketing system for the County of Fairfax to report troubles and to manage and track open troubles. The responder shall provide the County of Fairfax with read-only access to the help desk system to run reports. The responder shall grant the County of Fairfax read-only real-time access the responder's trouble ticket reporting system.		

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	Responders are advised that the County of Fairfax reserves the right to conduct a site visit of the facility from which the bidder proposes to provide help desk support. Further, the County of Fairfax reserves the right to conduct a site visit of the facility from which the responder provides help desk support at any time during the term of the contract.		
6.28.11.2	**Help Desk Software Tools** The help desk shall be equipped with appropriate software tools to initiate trouble tickets, and shall track and monitor the progress of trouble tickets. The software tools shall be configured to allow authorized users from the County of Fairfax or individual PSAPs to initiate trouble tickets electronically, to track and monitor the status of trouble tickets, and to view and create management reports. The help desk and the NOC shall have the ability to access the responder's trouble ticket reporting system for all aspects of the system, including without limitation, the applications and appliances at any data centers and CPE, and shall communicate directly with each other regarding troubles.		
6.28.12 Training of Responder Technicians			
6.28.12	**Training of Technicians** The responder shall conduct training of all responder technicians, including customer service technicians, specially trained technicians, field technicians, and regional supervisory service technicians, performing services under this contract, or any renewal thereof. Such training shall take place at regular intervals and shall include industry standard skill set testing. At the request of the County of Fairfax, the responder shall provide verification of such training to the County of Fairfax. The responder shall submit to the County of Fairfax a comprehensive training plan, including without limitation, the training curriculum, and shall cooperate with the County of Fairfax to correct deficiencies identified by the County of Fairfax. At the request of the County of Fairfax, the responder shall remove any and all technicians identified by the County of Fairfax for reasons including, but not limited to, lack of or inadequate training or performance issues, from performing services under the contract, or any renewal thereof.		
6.28.13 System Performance Standards			
6.28.13.1 System Availability			
6.28.13.1.1	The system, including all subsystems, applications and appliances, shall be available a minimum of 99.999% of the time when measured on a 24 x 7 basis during a calendar year, including system maintenance and upgrades. Availability may be achieved through redundancy or fault tolerance. Responders shall demonstrate how the system shall achieve this requirement.		

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	Responders shall describe how the system shall achieve this availability standard. Responders shall include all required hardware, software, and services needed for a complete installation that can support the expected transaction volumes of call routing, location verification, and other functions and capabilities for a completely functional NG9-1-1 Telephony Platform as defined within this RFP.		
6.28.13.1.2	The system shall be sized to handle the current and anticipated volume of transactions and activities and the projected anticipated volume of transactions and activities. The historical incoming call volume data is set forth in Attachment 9.		
6.28.13.2 Call Delivery Availability			
6.28.13.1	Each System component must not exceed a mutually agreed number of hours per month for scheduled maintenance events. Notification of a scheduled maintenance event must be received within 10 business days of the event.		
6.28.13.3 IP Network Measurements and Reporting			
6.28.13.3.1	**Network Performance –** As the single point of contact for Fairfax County for all issues related to the CPE and the network and associated data circuits, the Responder must measure and report on the network performance against the Service Levels on a monthly basis. For any circuit downtime, outages, or interruptions the responder must provide a written report describing the degradation of service, or outage, including the root cause and the plan to prevent similar occurrences in the future. Trend Data must be supplied with this report showing current and previous monthly performances.		
6.28.13.3.2	**Bandwidth Management –** Fairfax County must be able to observe overall bandwidth usage and specific usage between sites. The selected responder solution must be able to create detailed SLA monitoring reports in real-time. Fairfax County must be able to view real-time or near real-time bandwidth performance and utilization reports. The solution should automatically determine the traffic type and provide various views into bandwidth usage. A web portal or browser enabled viewer is preferred.		
6.28.13.3.3	**VOIP Quality and Quality of Service (QOS) –** Voice quality must be maintained at traditional PSTN levels and have priority over any other IP traffic. The network performance requirements are to be in accordance with NENA 08-506, Version 1, December 14, 2011, or the current NENA approved version.		
6.28.14 Notification, Restoration, and Escalation			
6.28.14.1	**Notification and Escalation** The responder shall submit a notification and escalation path plan for critical, major, and minor system malfunctions in, at a minimum, the following periodic increments as outlined in 6.28.4 and 6.28.5 and 6.28.6.		
6.28.14.2	**Restoration Phase** Fairfax County shall determine whether a malfunction is critical, major, or minor priority, and the responder shall, within fifteen (15) minutes of such determination, generate a trouble ticket in the time frame outlined in 6.28.4 (Response Time) with all the specific details of the known malfunction documented to include the date and time of such determination.		

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	When determination has been made that a malfunction is critical, major, or minor, the responder shall begin restoration and attempt to isolate the malfunction to a network, application and appliance or CPE issue, and shall determine and engage the appropriate resources to resolve the issue. In the event of a critical malfunction, the responder shall dispatch the appropriate resources, and at a minimum, a trained and qualified technician, to the customer location. The responder shall dispatch resources to the PSAP and/or the data centers, and the responder shall establish and provide, upon request of the County of Fairfax and/or the PSAP, an estimated time of arrival of any required resource(s) at that location(s). The responder shall track all related activity during this time period in the trouble ticket, including the status of any network troubles that were referred. If the event is critical, the responder shall employ an internal notification process that will advise appropriate responder personnel of the event. The responder shall provide status updates on a regular periodic basis to the PSAP and the County of Fairfax that shall include an updated estimated time of arrival of technicians, if applicable, as well as any known information. When appropriate and upon request of Fairfax County the responder shall establish an informational bridge with the County of Fairfax to keep the County of Fairfax informed of progress regarding restoration efforts. For major system malfunctions, the responder shall monitor the progress of the restoration process. If required resource commitments have not been fully committed with an expedited response, the responder shall escalate the malfunction to the next level manager. At each half hour increment if required commitments have not been made, the responder shall escalate the issue to the appropriate organizational level. For critical system malfunctions the responder shall ensure that appropriate organizational management have been notified and that appropriate resource commitments have been secured. For critical and major system malfunctions, the responder shall provide a status report to the County of Fairfax and the PSAP at required intervals that shall include an estimated time of arrival of the technician(s) and shall include sufficient detail so as to permit the County of Fairfax and the PSAP to appropriately employ the information set forth in the status report(s). For critical, major and minor/other system malfunctions, the responder shall track all related activity in the trouble ticket and the Incident Report. For critical, major, and minor/other system malfunctions, notification shall be provided via text message, group e-mail, and by any other means as directed by the County of Fairfax. Should the County of Fairfax elect, during a major system malfunction or minor system malfunction, to escalate/communicate an issue during any of the above time periods, the County of Fairfax will contact the help desk. The help desk shall immediately transfer the County of Fairfax to the appropriate manager who will handle the escalation request. If the appropriate manager is not available, the customer service center shall arrange a call-back to the County of Fairfax from the appropriate manager within fifteen (15) minutes.		

Compliance Matrix			
Req. No.	**Requirement**	**Response Code**	**Page Described**
	Should the County of Fairfax elect, during a critical system malfunction, to escalate/communicate an issue during any of the above time periods, the County of Fairfax will contact the Contract Manager (as designated by the responder) who will handle the escalation. The Contract Manager shall ensure that the County of Fairfax escalation request is immediately addressed, and if necessary, shall arrange for a call-back to the County of Fairfax from the appropriate manager within fifteen (15) minutes. The responder shall track and report on all activities from inception of the call to repair.		
6.28.14.3	**Post Restoration** Once the responder determines that restoration is completed, the responder shall: • Enter the review stage to determine whether failure has been permanently repaired. This stage shall include investigating the cause of the failure, and documenting and instituting change where necessary; and • Provide the Incident Report, and upon request of the County of Fairfax, the trouble ticket relating to the incident in the Incident Report, within forty-eight (48) hours of restoration in order that the County of Fairfax can confirm restoration to the satisfaction of the County of Fairfax. The County of Fairfax may release such Incident Report to a PSAP or other interested parties upon request of such PSAP or other interested parties consistent with any applicable public records laws and regulations.		
6.28.14.4	**System Backup and Restoration Capability** The responder shall provide the necessary equipment (hardware and software) to allow for required backups and/or restoration of system applications and appliances, including for call payload and user information. The responder shall provide a comprehensive backup solution that is expandable and that includes detailed monitoring. Responders shall explain in detail how the backups/restorations are accomplished and what effects these operations have on the production environment. Systems that require components to be removed from service or placed into a degraded mode of operation for routine backups will not be acceptable. The system backups shall be performed without County of Fairfax or PSAP intervention. Responders shall identify the frequency of routine backups. The system shall automatically prepare a listing of all information manually deleted from the system and of all information automatically moved to archives or purged. The responder shall maintain current images of the servers and workstation. The responder shall ensure that the system archives system information for such period of time as required by law, or as otherwise required by the County of Fairfax.		
6.28.14.5	**SNMP Support** All IP manageable network hardware shall provide SNMP traps to an approved management system.		
6.28.15 Preventive Maintenance			
6.28.15.1	**Preventive Maintenance** The County of Fairfax requires regular preventive maintenance to preclude failures due to lack of maintenance. The responder shall supply a schedule of preventive maintenance work for the duration of the contract, including renewals, indicating what work is to be performed, where the work will be done and the times when the work will commence and end.		

Compliance Matrix			
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	The written approval of the County of Fairfax is required prior to commencement of work involving preventive maintenance on any application or appliance which, if a catastrophic failure were to occur, could result in a cascading failure of the system. Responders shall describe in detail its preventive maintenance program. Responders shall specify the preventive maintenance schedule and/or the maintenance steps and shall estimate the amount of scheduled maintenance (system down-time) for each component of the system. This preventive maintenance shall include system health and pro-active monitoring. The maintenance windows shall be by mutual agreement of the parties. The responder shall perform routine, preventive maintenance on the system. The responder shall perform such maintenance according to the plan and schedule approved by the County of Fairfax. The responder shall provide written documentation of the results of the preventive maintenance to the County of Fairfax. Maintenance shall include keeping all system and equipment software up to date. At the end of the warranty period, all software shall be of the latest version, release, and service release that applies to the equipment provided that has been authorized by the Department.		
6.28.15.2	**Preventive Maintenance Tasks** The responder shall, at a minimum, perform the following preventive maintenance tasks for all workstations and servers on a schedule recommended by the equipment manufacturer, but such preventive maintenance shall occur no less than twice per year: Disk Optimization: The responder shall perform disk optimization on all workstations automatically via installed software and performed continuously. Through remote monitoring, the responder shall ensure that it manages alerts which will identify the percentage of disk space utilization. Where alerts are received respective to disk space allocation, the responder shall ensure that it will analyze the associated disk drive and work to identify a solution. The responder should identify other recommended aspects of preventive maintenance that are recommended.		
6.28.15.3	**Spare Equipment Repair and Replacement** Responders shall describe the policy for expediting repair of equipment that has been inoperative for eight (8) hours, twenty-four (24) hours, and longer than twenty-four (24) hours. A sufficient supply of spare parts shall be maintained at various locations to allow immediate restoration of operation of the system. In the event that these parts are consumed, replacement stock shall be available via emergency request and Air Freight within twenty-four (24) hours of the equipment failure. Stocking of spare parts shall remain the sole responsibility of the responder.		
6.28.15.4	**Spare Inventory at Responder Locations** The responder shall maintain a level of spare inventory that is consistent with the needs of repair. The responder shall, on a monthly basis, track and analyze equipment failures that require a replacement from spare inventory. The responder shall adjust the inventory as needed based upon a monthly analysis. Analysis shall be documented and provided to the County of Fairfax upon request. The responder shall identify such spare parts to be maintained at their facilities or if agreed to at Fairfax County facilities. The responder shall use the spare inventory to support the PSAPs and shall be adjusted and add to the inventory on an as needed basis. The responder also shall use the inventory to replenish the remote parts depots when their stock becomes depleted		

Compliance Matrix			
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	due to repairs. If there is a repeated malfunction or failure, the County of Fairfax may require the responder to increase its spare parts inventory to ensure sufficient inventory is available to address this repeated malfunction.		
6.28.15.5	**Spare Inventory at PSAPs and Data Centers** In addition to the spare inventory that will be maintained at the responder's locations, the responder shall maintain critical spare inventory on-site at each PSAP and data center location. The responder shall identify critical spare inventory that shall be maintained on-site at each PSAP on an appropriate form. The responder shall add equipment to this list based on the frequency and type of repair so as to ensure that critical spare inventory is maintained on-site at PSAPs and data centers at all times. If there is a repeated malfunction or failure, the County of Fairfax may require the responder to replenish spare parts inventory.		
6.28.15.6	**Maintenance of Responder-Furnished Software** The responder shall maintain all responder-furnished software in a reliable operating condition, and incorporate the latest software changes applicable to the installed system to include version upgrades. The responder shall describe the nature of his software maintenance coverage and program for maintaining reliable, efficient, and current software. The maintenance service fee shall include providing and installing any system software patches, upgrades, enhancements, etc., developed by the software manufacturer during the service contract period.		
6.28.15.7	**Electrostatic Discharge Precautions** Any and all service technicians of the responder working on applications and appliances or CPE shall follow industry standard electrostatic discharge precautions. Precautions shall include, but are not limited to, wearing protective boots straps and/or wrist straps and utilizing anti-static mats.		
6.29 Additional Services			
6.29.1	At the request of the County of Fairfax, the responder may be required to provide additional services. The responder shall complete the requested services through a separate statement of work to be negotiated by the parties at the time of request and subject to the prices and terms and conditions of the Successful Offerors contract.. Price/Cost tables are intended to capture all known commodities and services that may be needed as of the date of release of this RFP. Should the County of Fairfax identify a need for a commodity and/or service within the scope of this RFP, but for which a rate was not requested in the Cost Tables, Responders are advised that all rates shall be reasonable and consistent with that available in the industry and will be added to the contract via a mutually agreed upon contract amendment.		
6.30 Removal of CPE, Applications, And Appliances			
6.30.1	**Removal Of CPE, Applications, And Appliances** At the request of the County of Fairfax at the termination or expiration of the contract, the responder shall de-install and remove all CPE, applications and appliances furnished hereunder, including without limitation, servers, cabling workstations, interfaces, etc. to be stored in a location on-site at the PSAP or at such other location to be designated by the County of Fairfax		
6.31 County Information Systems Requirements			

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6.31.1 Architecture Review Board			
6.31.1	**Architecture Review Board** Information systems delivery and management is governed by an Architecture Review Board and other program specific committees that are chartered to advise and /or direct development efforts and promote conformance to a variety of standards including but not limited to those in the IT Plan. Systems provided by the responder are sometimes reviewed by this board.		
6.31.2 Enterprise Standards			
6.31.2	**Enterprise Standards** The proposed solution must adhere to overall County IT Enterprise Architecture and Standards. The County standards are consistent with those adopted by large, complex enterprises of similar scope, scale and portfolio diversity and industry best practices that enable interoperability across disparate systems. Often county applications are non-generic varieties specific to local government requirements and/or market and may require interoperability with state and federal processes, thus the county standards include standards being promulgated by the federal government. Corporate applications will typically use market best of breed with versions tailored to government.		

Attachment 1 - Definitions

The following words and phrases used in this RFP shall have the following meaning, unless the context requires otherwise.

Abandoned Call: a call placed to 911 in which the caller disconnects before the call can be answered by the enhanced 911 telecommunicator.

Alternate PSAP: a PSAP that is equipped with ALI and ANI, and that receives calls on an alternative routing basis when calls cannot be completed to the primary or regional PSAP.

Alternate Routing: the capability of routing 911 calls to a designated alternate location(s) if all 911 trunks are busy or out of service, and may be activated upon request, or automatically if detectable, when 911 equipment fails or the PSAP itself is disabled.

Americans with Disabilities Act or ADA: the Americans with Disabilities Act of 1990, as amended.

Answering Position: an appropriately equipped location within a PSAP that is used to receive 911 calls.

Applications and Appliances: the hardware and software required for 911 call and call payload acceptance, processing, and delivery to a PSAP.

Automatic Location Identification or ALI: an enhanced 911 service capability that allows for the automatic display of information relating to the geographical location of the communication device used to place a 911 call.

Automatic Number Identification or ANI: an enhanced 911 service capability that allows for the automatic display of a telephone number used to place or route a 911 call.

Back to Back User Agent (B2BUA) – This is a logical entity that receives a request and processes it as a user agent server (UAS). In order to determine how the request should be answered, it acts as a user agent client (UAC) and generates requests. Unlike a proxy server it maintains dialog state and must participate in all requests sent on the dialogs it established.

Bidder: an individual or organization proposing to enter into a contract to provide a commodity or service to the Commonwealth under this RFP.

Border Control Function or BCF: provides a secure entry into the ESInet for emergency calls presented to the network. The BCF incorporates firewall, admission control, and may include anchoring of session and media as well as other security mechanisms to prevent accidental, deliberate, or malicious attacks on PSAPs or other entities connected to the ESInet.

Call: a session established by signaling with two way real time media and involves a human making a request for help or a non-human initiated call. Sometimes it is referred to as a "voice call", "video call" or "text call" when specific media is of primary importance. The term "non-human-initiated call" refers to a one-time notification or series of data exchanges established by signaling with at most one way media, and typically does not involve a human at the "calling" end. The term "call" may also be used to refer to either a "Voice Call", "Video Call", "Text Call" or "Data–only call", since they are handled the same way through most of Next Generation 911. It is an element of current and anticipated 911 call payloads.

Call delivery: the capability to route a 911 call to the designated selective router for ultimate delivery to the designated PSAP for the caller's ANI.

Definitions

Call payload: any multi-media that presents to the network as a call, request for emergency assistance, or an equivalent, including without limitation, real-time communication and non-real time communication, voice, text, video, images, alerts, alarms, graphics, or telematics.

Call Processing: the system and process that permits a PSAP to receive, receive, process, and route a 911 call and other current and anticipated call payloads to a PSAP within the defined environment providing complete call payloads with callback and location information of the calling party to the call taker position. Call processing also includes the ability to identify and answer TDD/TT/TTY and abandoned and silent calls including complete and accurate ANI and ALI of the TDD/TT/TTY calls.

Civic Address: any city-style address that includes a house number and a street name is considered a Civic Address. Civic addresses include a community name that may or may not be recognized by the United States Postal Service or be MSAG valid. Civic addresses may be used as Postal address if recognized by the United States Postal Service. Civic Addresses may be used as MSAG addresses if they are an exact match to the MSAG address. A rural route delivery address or FPO or APO address is not considered a Civic address.

Commencement of Repair: the initiation of action to repair a broken, damaged, or failed system component, which action shall continue until repair has occurred. Diagnosis, troubleshooting, and/or the opening of a trouble ticket shall not constitute commencement of repair.

Commonwealth: the Commonwealth of Virginia

Communication Services: includes any of the following: (a) the transmission, conveyance or routing of real-time, two-way voice communications to a point or between or among points by or through any electronic, radio, satellite, cable, optical, microwave, wireline, wireless or other medium or method, regardless of the protocol used; (b) the ability to provide two-way voice communication on the public switched network; (c) wireless enhanced 911 service; (d) wireline enhanced 911 service; (e) interconnected VoIP provider service as defined by the regulations of the FCC regulations; (f) IP -enabled service; or (g) prepaid wireless service.

Communication Service Provider: an entity that provides communication services to a subscriber or end user.

Responder: a bidder that has been selected and has contracted with the County to provide services under this RFP.

Customer Premises Equipment or CPE: call processing equipment located at a PSAP.

Default PSAP: a PSAP that is equipped to receive incoming calls that do not contain ANI or ALI or otherwise incomplete information allowing the proper routing of a call payload.

Deliverable: any work product that the responder delivers for the purposes of fulfilling its obligations to the County under the terms of the Agreement, including work product that the responder must submit to the County for its approval in accordance with the formal acceptance procedures set forth in the RFP.

Domain Name Server (DNS) – The DNS is used in the Internet today to resolve domain names. The input to a DNS is a domain name (e.g., telcordia.com); the response is the IP address of the domain. The DNS allows people to use easy to remember text-based addresses and the DNS translates those names into routable IP addresses.

DLR: digital logging recorder that records date, time, audio and call detail data, and other transactions involved in the processing of calls to the PSAP.

Definitions

Emergency Call Routing Function (ECRF) – The ECRF receives location information (either civic address or geo-coordinates) as input and uses this information to provide a URI that can be used to route an emergency call toward the appropriate PSAP for the caller's location. Depending on the identity and credentials of the entity requesting the routing information, the response may identify the PSAP, or an Emergency Services Routing Proxy (ESRP) that acts on behalf of the PSAP to provide final routing to the PSAP itself. The same database that is used to route a call to the correct PSAP may also be used to subsequently route the call to the correct responder, e.g., to support selective transfer capabilities. The ECRF is a functional element in an ESInet which is a LoST protocol server where location information (either civic address or geo-coordinates) and a Service URN serve as input to a mapping function that returns a URI used to route an emergency call toward the appropriate PSAP for the caller's location or towards a responder agency.

Emergency Services Internet Protocol Network or ESInet: a managed IP network that is used for emergency services communications, and which can be shared by all public safety agencies. It provides the IP transport infrastructure upon which independent application platforms and core functional processes can be deployed, including, but not restricted to, those necessary for providing Next Generation 911 services. ESInets may be constructed from a mix of dedicated and shared facilities. ESInets may be interconnected at local, regional, state, federal, national and international levels to form an IP-based inter-network (network of networks). This term is used to refer to a private IP network or IP Virtual Private Network (VPN) that is used for communications between PSAPs and among other entities that support, or are supported by PSAPs in providing emergency call handling and response.

Emergency Service Number or ESN: a 3-5 digit number that represents one or more emergency service zones. An ESN is defined as one of two types: Administrative ESN and Routing ESN.

Emergency Services Routing Proxy (ESRP) – ESRP is an i3 functional element which is a SIP proxy server that selects the next hop routing within the ESInet based on location and policy. There is an ESRP on the edge of the ESInet. There is usually an ESRP at the entrance to an i3 PSAP. There may be one or more intermediate ESRPs between them.

Emergency Service Zone or ESZ: a geographical area that represents a unique combination of emergency service agencies (e.g., law enforcement, fire, and emergency medical service) that are within a specified 911 governing authority's jurisdiction. An ESZ can be represented by an ESN to identify the ESZ.

End User: a person who uses communication services.

Enhanced 911 Network Features: the components of enhanced 911 service that provide selective routing, automatic number identification and automatic location identification.

Enhanced 911 Service: a service consisting of communication network, database and equipment features provided for subscribers or end users of communication services enabling such subscribers or end users to reach a PSAP by dialing the digits 911, or by other means approved by the department, that directs calls to appropriate PSAPs based on selective routing and provides the capability for automatic number identification and automatic location identification.

Enhanced 911 Service Provider: any entity that provides 1 or more of the following 911 elements: network, database or PSAP customer premises equipment.

Enhanced 911 Systems: a distinct entity or geographical segment in which enhanced 911 service is provided, consisting of network routing elements serving as a control office and trunking connecting all central offices within a geographical segment, and including PSAPs and network used to deliver location data to PSAPs from a data base.

Definitions

Enhanced 911 Telecommunicator: an individual who acts in the capacity of an enhanced 911 call taker.

FCC: the Federal Communications Commission.

Functional Element: major process, application, or appliance, including network bandwidth and bandwidth support.

Geographic Information Systems or GIS: a computer software system that enables one to visualize geographic aspects of a body of data. It contains the ability to translate implicit geographic data (such as a civic address) into an explicit map location. It has the ability to query and analyze data in order to receive the results in the form of a map. It also can be used to graphically display coordinates on a map i.e., latitude/longitude from a wireless 911 call.

Government – This term is used to refer to government services that might be involved in emergency call handling or escalation. Examples might include: escalation of emergency incidents that require coordination among multiple government agencies, beyond PSAPs; broadcasts; notification services; Homeland Security.

Immediately Redirected: the instantaneous redirection of a 911 call to a PSAP to prevent the loss of a 911 call.

Intermediate ESInet – The intermediate ESInet is a network that may exist between the originating and terminating ESInets. An Intermediate ESInet receives a call from an originating ESInet (or another intermediate ESInet) and forwards the call to another intermediate ESInet or the terminating ESInet.

IP-enabled Service: a service, device or application which makes use of Internet Protocol, or IP, and is capable of entering the digits 911, or by other means as approved by the department, for the purposes of interconnecting users to the enhanced 911 systems including, but not limited to, voice over IP and other services, devices, or applications provided through or using wireline, cable, wireless, or satellite facilities or any other facility that may be provided in the future.

IP client – This term is used to refer to the IP endpoint communications equipment or application that is used to originate a voice, video or text request for emergency services (e.g., by calling 9-1-1). The term IP device or IP endpoint may also be used.

i3 Public Safety Answering Point (i3 PSAP) – The i3 PSAP is a PSAP that is capable of receiving IP-based signaling for delivery of emergency calls and for originating calls. The internal functions are not being specified in the i3 requirements, but the i3 PSAP is expected to be able to use SIP signaling for calls and IP-based data protocols for exchange of other information. It is expected that the CPE Technical Committee will produce a document describing the functionality of i3 PSAP equipment. An i3 PSAP is an instance of an IP PSAP, but in this document, we mean a PSAP conforming to the i3 standard.

Legacy Gateway: a signaling and media interconnection appliance between analog callers in legacy wirelines/wireless originating networks and an i3 architecture so that PSAPs are able to receive emergency calls from such legacy networks.

Legacy Network Gateway or LNG: a signaling and media interconnection appliance between legacy wireline/wireless originating networks and the Next Generation 911 provider's ESInet. This term is used to refer to a signaling and media interconnection point between callers in legacy wireline/wireless originating networks and the i3 architecture, so that i3 PSAPs are able to receive emergency calls from such legacy networks.

Legacy PSAP: a PSAP that cannot process calls received via i3-defined call interfaces (IP-based calls) and still requires the use of CAMA or ISDN trunk technology for delivery of 911 emergency calls. This term is used to describe PSAPs that are not capable of communicating with VoIP protocols or of supporting the i3-based interfaces specified as part of the i3 solution.

Legacy PSAP Gateway or LPG: an i3 functional element that supports the interconnection of the ESInet with legacy PSAPs.

Legacy Selective Router Gateway or LSRG: This gateway facilitates the routing/transfer of emergency calls between the ESInet and the legacy emergency services network. The LSRG will have to interwork location infrastructure between Next Generation 911 and legacy emergency services environments.

Legacy System: the Commonwealth's existing analog-based enhanced 911 systems.

Location Determination and Acquisition Functions – Location determination includes the functions necessary to accurately and automatically (without input from the user) determine the position of the IP device and associate that location information uniquely with that device. Location acquisition refers to the functions necessary to make that location information available to the device on request, or to make that location information available to a Proxy acting on behalf of that device so that location information can be used for emergency calling.

Location Information Server (LIS) – A LIS is a functional element that provides locations of endpoints. A LIS can provide Location-by-Reference, or Location-by-Value, and, if the latter, in geo or civic forms. A LIS can be queried by an endpoint for its own location, or by another entity for the location of an endpoint. In either case, the LIS receives a unique identifier that represents the endpoint, for example an IP address, circuit-ID or MAC address, and returns the location associated with that identifier. The LIS is also the element that provides the dereferencing service, exchanging a location reference for a location value.

Location to Service Translation (LoST) Protocol: a protocol that takes location information and a Service URN and returns a URI, is used generally for location-based call routing and, in Next Generation 911, is used as the protocol for the ECRF and LVF.

Location Validation: refers to the action of ensuring that a civic address can be used to discern a route to a PSAP.

Location Validation Function or LVF: function that provides sufficient location-based information to a PSAP that allows a 911 call taker to dispatch emergency responders to a 911 call scene. The location information is provided by civic based addresses or latitude/longitude data. The LVF is used to validate location objects against the next generation Master Street Address Guide (MSAG). Pre-validation of the location information ensures that the calls can be routed to the appropriate PSAP and that emergency services can be dispatched to the correct location.

Master Street Address Guide or MSAG: a database of street names and house number ranges within their associated communities defining emergency service zones and their associated emergency service numbers to enable proper routing of 911 calls.

Milestone Payment: a defined payment amount associated with the completion of a particular Deliverable or set of Deliverables.

Multi-line Telephone System or MLTS: a system comprised of common control units, telephones and control hardware and software providing local telephone service to multiple end-use customers. Multi-line telephone

system includes VoIP and includes network and premises based systems such as centrex, private branch exchange or pbx, and hybrid key telephone systems, but does not include key telephone systems.

Multi-line Telephone System Operator or MLTS Operator: a person or entity that owns, leases, or rents and manages or operates a multi-line telephone system through which an end user may place a 911 call through the public switched network.

Multimedia – Multimedia functions might include such things as conference bridge resources, or logging recording services for all forms of media: voice, video and text.

National Emergency Number Association or NENA: a not for-profit corporation established in 1982 to further the goal of "One Nation-One Number." NENA is a networking source and promotes research, planning and training. NENA strives to educate, set standards and provide certification programs, legislative representation and technical assistance for implementing and managing 911 systems.

NENA i3 Standards or i3: NENA Next Generation 911 standards and requirements, including without limitation, the NENA Security for Next Generation 911 Standard and the NENA i3 Technical Requirements Documents, now available or as may become available in the future.

Network Components: any software or hardware for a control switch, other switch modification, trunking or any components of a computer storage system or database used for selective routing of 911 calls, automatic number identification and automatic location identification, including a PSAP.

Next Generation 911: an enhanced 911 system that incorporates the handling of all 911 calls and messages, including those using IP-enabled services or other advanced communications technologies in the infrastructure of the 911 system itself.

NG9-1-1 Telephony Platform or System: the Next Generation 911 emergency communication system procured under this RFP.

Open Systems Interconnection Model or OSI model: a seven layer hierarchical reference model structure developed by the International Standards Organization for defining, specifying, and relating communications protocols.

OTIS: Office of Technology and Information Services within the Executive Office of Public Safety and Security.

Originating ESInet – The originating ESInet is the first emergency services network in the call flow. Originating networks (those initiating 9-1-1 calls) deliver their emergency calls to this network. An originating ESInet will make routing decisions and forward the emergency call to another ESInet for routing to the PSAP.

Point of Presence or POPs: the location at which an Internet service provider exchanges traffic and provides interconnect services.

Policy-based Routing Function (PRF) – This functional element applies techniques to determine alternate routing addresses based on policy information associated with the destination PSAP. The PRF uses its state knowledge, such as PSAP registration state or time of day and the policy for a PSAP to make a route determination. The PRF resides in the terminating ESInet.

POTS: plain old telephone service.

Definitions

Primary PSAP: a PSAP equipped with automatic number identification and automatic location identification displays, and is the first point of reception of a 911 call. It serves the municipality in which it is located.

Prime Responder: a general responder that provides an aggregate of systems and components and assumes overall end to end responsibility for the NG9-1-1 Telephony Platform.

Private Branch Exchange or PBX: a private telephone switch that is connected to the public switched telephone network.

Private Safety Department: an entity, except for a municipality or a public safety department, that provides emergency police, fire, ambulance or medical services.

Private Switch Automatic Location Identification or PS/ALI: a service option that provides enhanced 911 service features for multi-line telephone systems.

Public Safety Answering Point or PSAP: a facility assigned the responsibility of receiving 911 calls and, as appropriate, directly dispatching emergency response services or transferring or relaying emergency 911 calls to other public or private safety agencies or other PSAPs.

Public Safety Department: a functional division of a municipality or a state that provides firefighting, law enforcement, ambulance, medical or other emergency services.

Public Switched Telephone Network or PSTN: the network of equipment, lines, and controls assembled to establish communication paths between calling and called parties in North America.

Redundancy or Redundant: having one or more backup systems available in case of failure of the main system.

Repair: a permanent fix or repair, including replacement if necessary, of a broken, damaged, or failed network device, database, or CPE that allows such system or system component to be fully operational.

Request for Response or RFP: the mechanism used to communicate procurement specifications and to request responses from interested Responders.

Response: a response from a bidder to the Request for Response. A response shall include submissions commonly referred to as “bids,” “quotes,” or “proposals.”

Routing Proxy – A term used in SIP to describe a SIP server that receives SIP requests and forwards them on behalf of the requestor. A routing proxy determines the next hop for a SIP message and forwards the message.

Secondary PSAP: a PSAP equipped with automatic number identification and automatic location identification displays. It receives 911 calls only when they are transferred from the primary PSAP or on an alternative routing basis when calls cannot be completed to the primary PSAP.

Selective Routing: the method to direct 911 calls to the appropriate PSAP using a call routing database derived from the geographical location from which the call originated.

Silent Call: a 911 call received at a PSAP in which no audible voice or tone is received and the caller does not disconnect.

Silent Call Procedure: the enhanced 911 service feature, as prescribed by the Department, that allows an enhanced 911 telecommunicator to respond to silent calls so that a 911 caller who is unable to verbally communicate the emergency over the telephone may receive the appropriate response.

SNTP: simple network time protocol for time synchronization of system clocks.

Spatial: relating to, occupying, or having the character or space. Geographical information systems store spatial data in regional databases.

Spatial Information Function or SIF: specialized Geographic Information System with i3 compatible interfaces that is used to replicate required geospatial data to the i3 applications and appliances.

Standard Priority System Malfunction: Any trouble that is not defined as a Catastrophic System Malfunction, Major System Malfunction, or a High Priority System Malfunction.

Subscriber: a person who uses communications services.

Supplemental Data – Databases and Database Access Services that provide information requested by PSAPs and other entities on the ESInet in support of emergency services handling.

Tandem: a switching system in the enhanced 911 telephone network that establishes 911 call routing.

TDD/TT/TTY: a telecommunications device consisting of modems that permit typed telephone conversations with or between deaf, hard of hearing or speech impaired people.

TDD/TT/TTY Call Diverter: a device that monitors and detects Baudot tones and then automatically routes the TDD call to a specified position.

TDD/TT/TTY Detector: a device that monitors a trunk for Baudot tones and upon recognition, indicates the receipt of that type of call with a response sequence.

TDM Gateway – While NENA can specify the behavior of i3 PSAPs, it cannot specify responder systems. A gateway may be needed to connect an i3 PSAP to a responder who retains a TDM interface.

Telephone Company: a person, firm, corporation, association or joint stock association or company furnishing or rendering local telephone exchange service.

Terminating ESInet – A terminating ESInet does the final routing to the PSAP. If there is only one ESInet in the call flow then the terminating ESInet has the role of originating ESInet as well.

Text Telephone or TT: a machine that employs graphic communication in the transmission of coded signals through a wire or radio communications system. TT is interchangeable with the term TDD or telecommunications device for the deaf.

Trouble: any event that: 1) impacts the functioning or operations of a PSAP; or 2) is reported to the responder's help desk by a PSAP or the County Department.

Trouble Ticket: a tracking document that contains a concise, complete, and accurate history of the trouble from the time the trouble is reported to repair of the trouble. A trouble ticket shall include, but not be limited to, PSAP

location, date and time of ticket opening, date and time of ticket closing, ticket number, detailed description of problem, all steps taken during repair efforts and reason for closing ticket.

URI or Uniform Resource Identifier: a predictable formatting of text used to identify a resource on a network.

URN or Uniform Resource Name: a uniform resource identifier that uses the URN scheme and is intended to serve as persistent, location-independent resource names.

Uninterruptible Power Supply or UPS: a system designed to provide power, without delay or transients, during a period when the normal power supply is incapable of performing acceptably.

User Agent (UA) – Terminology used in the context of SIP to identify the IP device. In SIP, a UA is a network element that is capable of generating SIP requests (e.g., INVITE) and is capable of generating responses for received requests.

Voice Over Internet Protocol or VoIP: a type of IP-enabled service that allows for the two-way real time transmission of voice communications and has access to the public switched network.

Web Services – Web Services identifies an industry standard protocol for exchanges of information. In the i3 architecture, this term is being used as a catch-all for access to the sets of public and private data services to which i3 PSAPs may desire to have access.

Wireless Carrier: a commercial mobile radio service, as defined in 47 U S C 332(d), including resellers and prepaid providers of wireless services.

Wireless Enhanced 911 Service: the service required to be provided by wireless carriers under, and governed by, FCC order.

Wireline Carrier: an incumbent local exchange carrier or local exchange carrier operating in the commonwealth, or a telephone company, or any other person, corporation or entity that provides local exchange service.

Wireline Enhanced 911 Service: service provided by a wireline carrier that connects a subscriber dialing or entering the digits 911 to a PSAP.

24 x 7: Twenty-four (24) hours a day, seven (7) days a week, three hundred sixty-five (365) days a year.

Attachment 2 - Acronyms

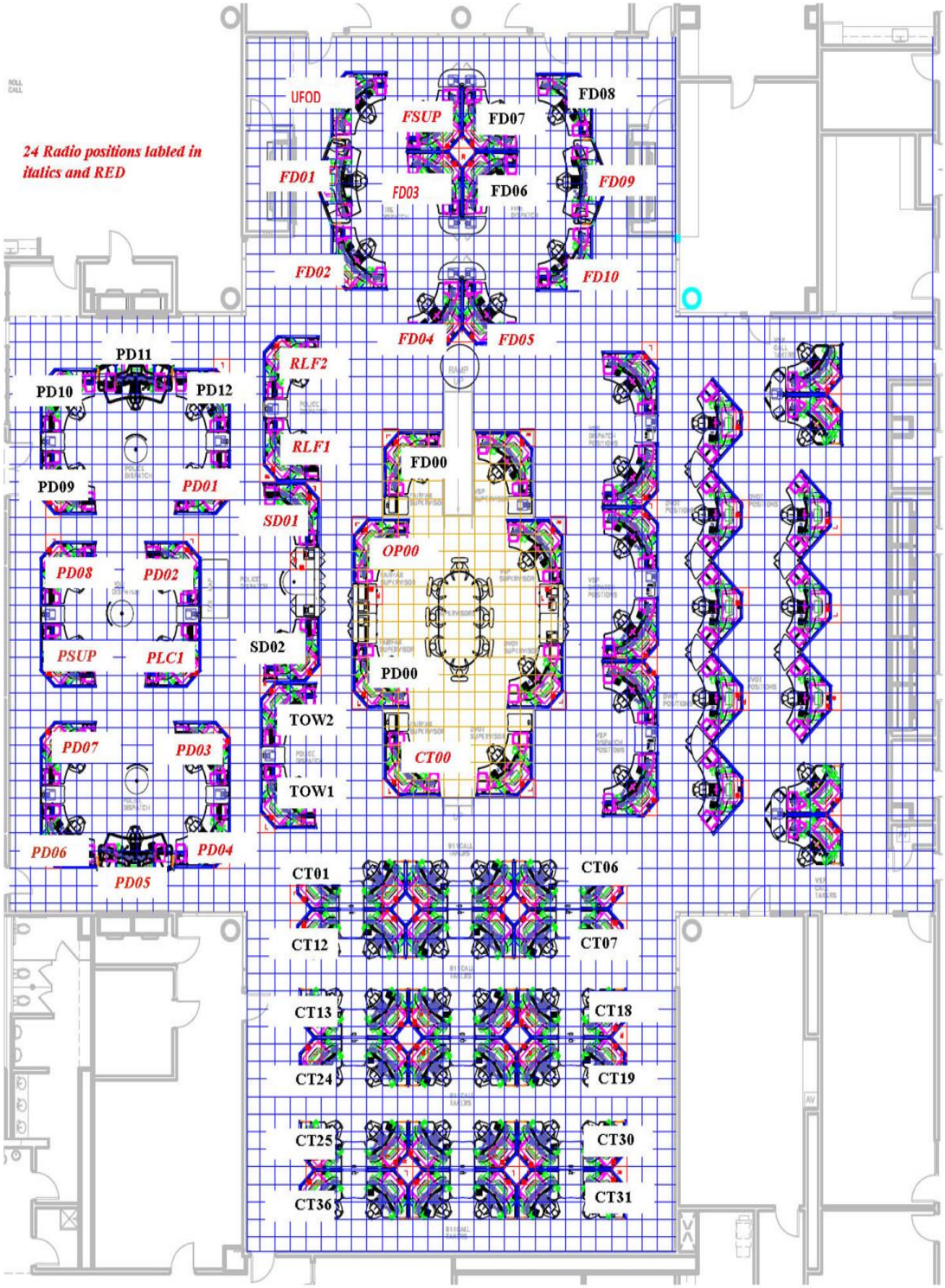
The acronyms used in this RFP shall have the meaning set forth in the following table, unless the context requires otherwise.

Descriptor/Acronym	Meaning
ANSI	American National Standards Institute
ATIS	Alliance for Telecommunications Industry Solutions
ATIS/ESIF	Alliance for Telecommunications Industry Solution/ Emergency Services Interconnection Forum
CAD	Computer Aided Dispatch
DDOS	Distributed Denial of Service
EIA	Electronics Industries Alliance
ESIF	Emergency Services Interconnection Forum
FCC	Federal Communications Commission
GML	Geographic Markup Language
ISP	Internet Service Provider
ITIL	Information Technology Infrastructure Library
LAN	Local Area Network
LIF	Location Interwork Function
LIS	Location Information Server
LoST	Location to Service Translation
MPLS	Multi-Protocol Label Switching
NEMA	National Electrical Manufacturers Association
NENA	National Emergency Number Association
OGC	Open Geospatial Consortium
PMO	Project Management Organization
QoS	Quality of Service
SDO	Standards Development Organization
SIO	Service Information Octet
SIP	Session Initiation Protocol
SNMP	Simple Network Management Protocol

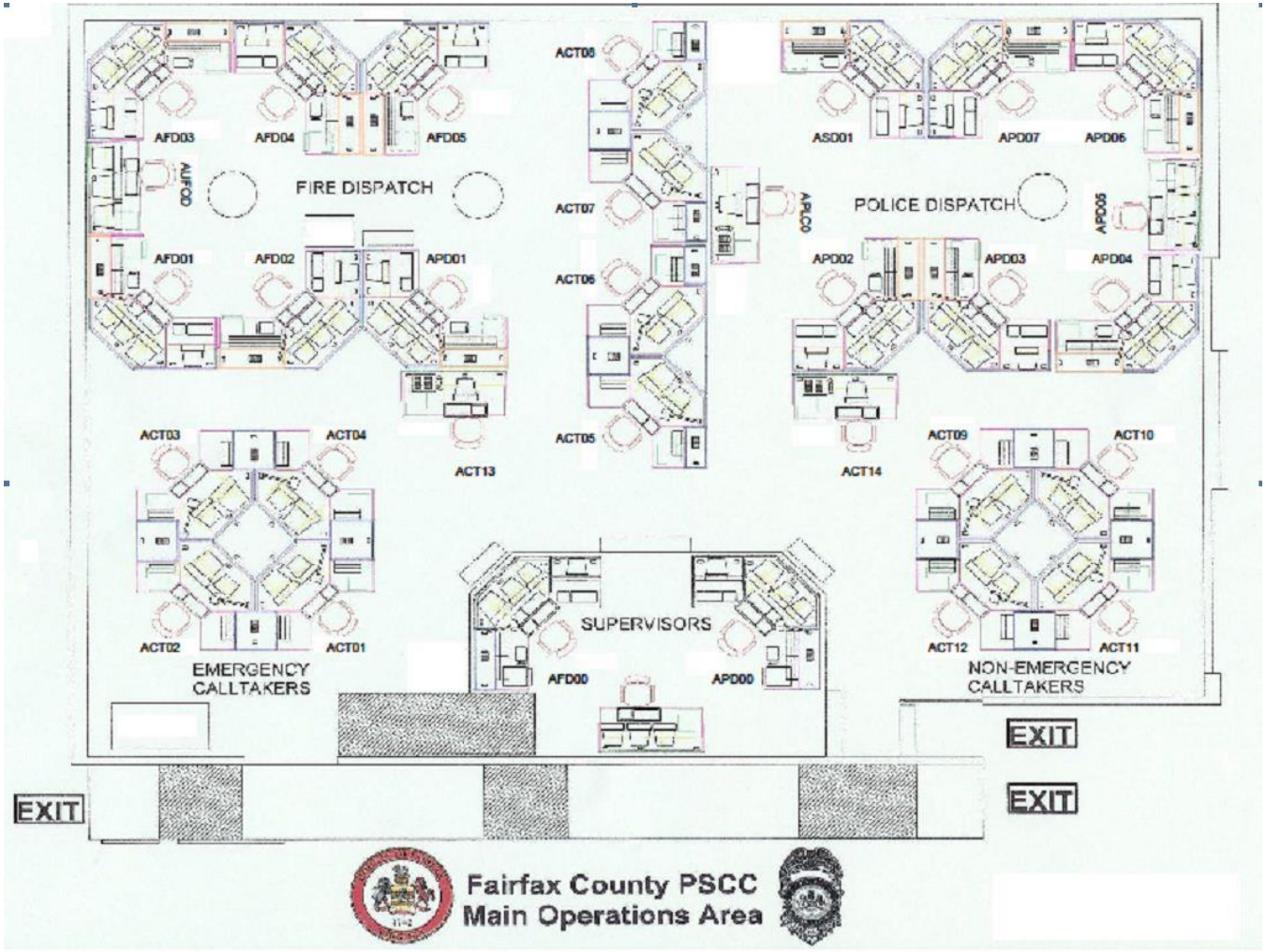
Acronyms

Descriptor/Acronym	Meaning
TIA	Telecommunications Industry Association
VPN	Virtual Private Network
WAN	Wide Area Network

Attachment 3 - MPSTOC Operations Floor Layout



Attachment 4 - Pine Ridge Operations Floor Layout



Attachment 5 - 911 Trunks at MPSTOC

Trunk Name	Service provider Tandem	Use
911_LAND_FX_1	Fairfax	Land Line Traffic
911_LAND_FX_2	Fairfax	Land Line Traffic
911_LAND_FX_3	Fairfax	Land Line Traffic
911_LAND_FX_4	Fairfax	Land Line Traffic
911_LAND_FX_5	Fairfax	Land Line Traffic
911_LAND_AX_1	Alexandria	Land Line Traffic
911_LAND_AX_2	Alexandria	Land Line Traffic
911_LAND_AX_3	Alexandria	Land Line Traffic
911_LAND_AX_4	Alexandria	Land Line Traffic
911_LAND_AX_5	Alexandria	Land Line Traffic
911_CELL_FX_1	Fairfax	Cellular Traffic
911_CELL_FX_2	Fairfax	Cellular Traffic
911_CELL_FX_3	Fairfax	Cellular Traffic
911_CELL_FX_4	Fairfax	Cellular Traffic
911_CELL_FX_5	Fairfax	Cellular Traffic
911_CELL_FX_6	Fairfax	Cellular Traffic
911_CELL_FX_7	Fairfax	Cellular Traffic
911_CELL_AX_1	Alexandria	Cellular Traffic
911_CELL_AX_2	Alexandria	Cellular Traffic
911_CELL_AX_3	Alexandria	Cellular Traffic
911_CELL_AX_4	Alexandria	Cellular Traffic
911_CELL_AX_5	Alexandria	Cellular Traffic
911_CELL_AX_6	Alexandria	Cellular Traffic
911_CELL_AX_7	Alexandria	Cellular Traffic
911_VoIP_FX_1	Fairfax	VOIP Traffic

9-1-1 CAMA Trunks at PSTOC

911_VoIP_FX_2	Fairfax	VOIP Traffic
911_VoIP_AX_1	Alexandria	VOIP Traffic
911_VoIP_AX_2	Alexandria	VOIP Traffic
911_TEST_1	Fairfax	Training Department
911_TEST_2	Alexandria	Training Department

Attachment 6 - MPSTOC Positions and Functional Use

Position	Application(s)	Use
CT01	Vesta / Vesta View	Call Taker
CT02	Vesta	Call Taker
CT03	Vesta	Call Taker
CT04	Vesta	Call Taker
CT05	Vesta	Call Taker
CT06	Vesta	Call Taker
CT07	Vesta	Call Taker
CT08	Vesta	Call Taker
CT09	Vesta	Call Taker
CT10	Vesta	Call Taker
CT11	Vesta	Call Taker
CT12	Vesta	Call Taker
CT13	Vesta	Call Taker
CT14	Vesta	Call Taker
CT15	Vesta	Call Taker

CT16	**Vesta**	**Call Taker**
CT17	**Vesta**	**Call Taker**
CT18	**Vesta**	**Call Taker**
CT19	**Vesta**	**Call Taker**
CT20	**Vesta**	**Call Taker**
CT21	**Vesta**	**Call Taker**
CT22	**Vesta**	**Call Taker**
CT23	**Vesta**	**Call Taker**
CT24	**Vesta**	**Call Taker**
CT25	**Vesta**	**Call Taker**
CT26	**Vesta**	**Call Taker**
CT27	**Vesta**	**Call Taker**
CT28	**Vesta**	**Call Taker**
CT29	**Vesta**	**Call Taker**
CT30	**Vesta**	**Call Taker**
CT31	**Vesta**	**Call Taker**
CT32	**Vesta**	**Call Taker**
CT33	**Vesta**	**Call Taker**

CT34	**Vesta**	**Call Taker**
CT35	**Vesta**	**Call Taker**
CT36	**Vesta**	**Call Taker**
RLF1	**Vesta**	**Radio Relief / Call Taker**
RLF2	**Vesta**	**Radio Relief / Call Taker**
SD01	**Vesta**	**Service Desk**
SD02	**Vesta**	**Service Desk**
TOW1	**Vesta**	**Tow In / Radio Relief**
TOW2	**Vesta**	**Tow In / Radio Relief**
CT00	**Vesta**	**Call Taking Supervisor**
OP00	**Vesta**	**Operations Supervisor**
TSM1	**Vesta,Magic, CCM**	**Vesta , Avaya Administration**
PLC1	**Vesta**	**Police Liaison**
PSUP	**Vesta**	**Supervision**
TRNG 00	**Vesta**	**Training Academy**
TRNG 01	**Vesta**	**Training Academy**
TRNG 02	**Vesta**	**Training Academy**
TRNG 03	**Vesta**	**Training Academy**

TRNG 04	**Vesta**	**Training Academy**
TRNG 05	**Vesta**	**Training Academy**
TRNG 06	**Vesta**	**Training Academy**
TRNG 07	**Vesta**	**Training Academy**
TRNG 08	**Vesta**	**Training Academy**
TRNG 09	**Vesta**	**Training Academy**
TRNG 10	**Vesta**	**Training Academy**
AD01	**Magic / CCM / Vesta view**	**Supervisor system administration**
AD02	**Magic / CCM**	**System Administration**
AD03	**Magic Vesta View**	**System Administration**
AD04	**Magic**	**System Administration**
AD05	**Magic**	**System Administration**
AD06	**Magic**	**System Administration**
AD07	**Magic**	**System Administration**
AD08	**Avaya real time display**	**System Administration**
AD09	**Avaya real time display**	**System Administration**
AD10	**Cassidian Network**	**System Administration**
FSUP	**Xtend**	**Fire Dispatch call processing**

MPSTOC Positions and Functional Use

FD01	**Xtend**	**Fire Dispatch call processing**
FD02	**Xtend**	**Fire Dispatch call processing**
FD03	**Xtend**	**Fire Dispatch call processing**
FD04	**Xtend**	**Fire Dispatch call processing**
FD05	**Xtend**	**Fire Dispatch call processing**
FD06	**Xtend**	**Fire Dispatch call processing**
FD07	**Xtend**	**Fire Dispatch call processing**
FD08	**Xtend**	**Fire Dispatch call processing**
FD09	**Xtend**	**Fire Dispatch call processing**
FD10	**Xtend**	**Fire Dispatch call processing**
UFOD	**Xtend**	**Fire Dispatch call processing**
FD Admin	**Xtend**	**System Administration**

Attachment 7 - Training Academy Positions

County Position	Primary 911 phone system workstation	Back Up phone system	Recorded by long term recorder
TRNG 00	Yes	Yes	Yes
TRNG 01	Yes	Yes	Yes
TRNG 02	Yes	Yes	Yes
TRNG 03	Yes	Yes	Yes
TRNG 04	Yes	Yes	Yes
TRNG 05	Yes	Yes	Yes
TRNG 06	Yes	Yes	Yes
TRNG 07	Yes	Yes	Yes
TRNG 08	Yes	Yes	Yes
TRNG 09	Yes	Yes	Yes
TRNG 10	Yes	Yes	Yes

Attachment 8 - 911 Trunks at Pine Ridge (APSCC)

Circuit ID	Service provider Tandem	Use
703-911-2801	Fairfax	Land Line
703-911-2802	Fairfax	Land Line
703-911-2803	Fairfax	Land Line
703-911-2804	Fairfax	Land Line
703-911-2805	Fairfax	Land Line
703-911-5606	Fairfax	Cellular
703-911-5607	Fairfax	Cellular
703-911-5601	Fairfax	Cellular
703-911-5602	Fairfax	Cellular
703-911-5603	Fairfax	Cellular
703-911-5604	Fairfax	Cellular
703-911-5605	Fairfax	Cellular
703-911-2041	Fairfax	VOIP
703-911-2042	Fairfax	VOIP
703-911-1280	Alexandria	Land Line
703-911-2280	Alexandria	Land Line
703-911-3280	Alexandria	Land Line
703-911-4280	Alexandria	Land Line
703-911-5280	Alexandria	Land Line
703-911-7560	Alexandria	Cell
703-911-1560	Alexandria	Cell
703-911-2560	Alexandria	Cell
703-911-3560	Alexandria	Cell
703-911-4560	Alexandria	Cell
703-911-5560	Alexandria	Cell
703-911-6560	Alexandria	Cell

9-1-1 CAMA Trunks at Pine Ridge (APSCC)

703-911-1204	Alexandria	VOIP
703-911-2204	Alexandria	VOIP

Attachment 9 - Fairfax County Representative Incoming Call Volumes

DPSC PSCC
INCOMING Call Counts
(includes answered and abandoned calls)
SUMMARY
FY 2013

ACD Calls (Note 1)	Jul (Note 4)		Aug		Sep		Oct		Nov		Dec		Jan		Feb		Mar		Apr		May		Jun		Total	
	PTS	BUTS	PTS	BUTS	PTS	BUTS	PTS	BUTS	PTS	BUTS	PTS	BUTS	PTS	BUTS	PTS	BUTS	PTS	BUTS	PTS	BUTS	PTS	BUTS	PTS	BUTS	PTS	BUTS
Emergency/911	35,162	8	32,524	462	31,543	264	31,538	110	29,050	339	30,402	125	28,704	60	25,357	132	28,196	157	31,147	92	31,520	235	32,707	141	367,850	2,125
Emergency/Pri 2	7,908	7	6,734	155	6,545	73	6,282	47	5,930	69	5,814	51	6,299	11	5,696	44	6,112	43	5,964	30	6,327	40	6,377	29	75,988	599
Non-Emergency/2131	34,748	17	32,679	468	31,743	284	32,377	199	29,372	309	28,549	131	29,743	50	26,188	98	28,895	156	31,737	99	33,618	245	34,199	146	373,848	2,202
Non-Emergency/Tow	654	0	612	9	517	4	639	5	602	3	575	6	677	3	609	2	714	7	633	3	670	4	686	3	7,588	49
Master Script abandoned calls (Note 2)	5,866	1	5,828	66	4,871	33	4,836	155	4,581	50	4,598	16	4,739	10	4,050	9	4,526	26	4,483	12	4,708	40	4,786	26	57,872	444
Subtotal =	84,338	33	78,377	1,160	75,219	658	75,672	516	69,535	770	69,938	329	70,162	134	61,900	285	68,443	389	73,964	236	76,843	564	78,755	345	883,146	5,419
Subtotal =	84,371		79,537		75,877		76,188		70,305		70,267		70,296		62,185		68,832		74,200		77,407		79,100		888,565	

Non-PVR Key DNs	Jul		Aug		Sep		Oct		Nov		Dec		Jan		Feb		Mar		Apr		May		Jun		Total	
	PTS	BUTS	PTS	BUTS	PTS	BUTS	PTS	BUTS	PTS	BUTS	PTS	BUTS	PTS	BUTS	PTS	BUTS	PTS	BUTS	PTS	BUTS	PTS	BUTS	PTS	BUTS	PTS	BUTS
Incoming DNs	********** DPSC does not receive external calls on Non-PVR Key DNs **********																									
Subtotal =	*na*		*na*		*na*		*na*		*na*		*na*		*na*		*na*		*na*		*na*		*na*		*na*		*na*	

Non-ACD Calls (Note 3)	Jul		Aug		Sep		Oct		Nov		Dec		Jan		Feb		Mar		Apr		May		Jun		Total	
	PTS	BUTS	PTS	BUTS	PTS	BUTS	PTS	BUTS	PTS	BUTS	PTS	BUTS	PTS	BUTS	PTS	BUTS	PTS	BUTS	PTS	BUTS	PTS	BUTS	PTS	BUTS	PTS	BUTS
Heliport PL	78		88		65		58		69		56		66		57		79		66		64		79		825	
Media (2 lines)	353		319		329		379		347		341		387		448		437		347		424		451		4,562	
PIO PL	6		10		16		22		11		12		17		13		10		13		26		21		177	
PLC (2 lines)	1,354		1,148		1,129		1,168		1,011		1,038		984		903		1,053		940		888		956		12,572	
Supv (6 lines)	1,023		866		881		949		741		805		819		833		1,051		878		849		894		10,589	
VA Power PL	20		14		13		14		10		10		11		18		7		3		9		19		148	
VDOT PL	70		64		96		134		57		34		58		26		30		29		35		42		675	
Water Authority PL	56		35		56		54		67		59		72		38		23		37		49		31		577	
Police Dispatch	41	0	30	0	44	0	33	0	29	0	33	0	40	0	43	0	47	1	47	0	42	1	56	0	485	2
Fire Dispatch	3,818	4	3,128	93	3,013	50	4,086	44	3,021	37	2,833	27	3,086	7	2,618	15	2,776	7	3,182	21	3,358	18	3,019	15	37,938	338
Teletype	1,737	2	1,560	15	1,316	13	1,405	11	1,323	26	1,429	8	1,437	8	1,390	10	1,421	7	1,530	7	1,543	14	1,641	11	86,280	132
Supv Office, PD00, FD00, BUTS Test Phone	380	0	280	11	260	7	370	11	324	10	309	1	422	0	272	1	350	10	453	2	351	7	370	7	4,141	67
UFO Office	14	0	13	0	29	0	21	0	20	0	15	0	40	0	28	0	28	0	25	0	26	0	17	0	276	539
UPO Office	34	0	27	0	23	0	19	0	6	0	10	0	25	0	9	0	14	0	55	0	35	0	42	0	299	0
Subtotal =	8,984	6	7,582	119	7,270	70	8,712	66	7,036	73	6,984	36	7,464	15	6,696	26	7,326	25	7,605	30	7,699	40	7,638	33	159,544	1,078
Subtotal =	8,990		7,701		7,340		8,778		7,109		7,020		7,479		6,722		7,351		7,635		7,739		7,671		160,622	

	Jul		Aug		Sep		Oct (Note 3)		Nov		Dec		Jan		Feb		Mar		Apr		May		Jun		Total	
	PTS	BUTS	PTS	BUTS	PTS	BUTS	PTS	BUTS	PTS	BUTS	PTS	BUTS	PTS	BUTS	PTS	BUTS	PTS	BUTS	PTS	BUTS	PTS	BUTS	PTS	BUTS	PTS	BUTS
All Systems Subtotal =	93,322	39	85,959	1,279	82,489	728	84,384	582	76,571	843	76,922	365	77,626	149	68,596	311	75,769	414	81,569	266	84,542	604	86,393	378	1,042,690	6,497
All Systems INCOMING Grand Total =	93,361		87,238		83,217		84,966		77,414		77,287		77,775		68,907		76,183		81,835		85,146		86,771		1,049,187	

Attachment 10 - Call Taker Skill Set Routing

911 PBX CCM Configuration 11/3/2014												
Route Name	Application/Script	Skillset	Queue to Skillset Script Priority	CDN	Default DN		CT01 - CT12 and CT25 - CT30	CT13 - CT24 and CT31 - CT36	SD01, SD02, RLF1, RLF2	TOW 1 and TOW2	CT00, FD00, PD00 and OP00	Training
							Position/Default DN					
911 Wireline	Emergency_sc	EMER	1	4000	4100		4100				4100	
911 Wireless	Emergency_sc	EMER	1	4001	4100							
911 VOIP	Emergency_sc	EMER	1	4002	4100							
Direct Lines	Emergency_sc	EMER	1	4005	4100							
911 Wireline (NCM Activated)	Emergency_sc	EMER	1	4013	4100							
911 Wireless (NCM Activated)	Emergency_sc	EMER	1	4014	4100							
911 VoIP (NCM Activated)	Emergency_sc	EMER	1	4015	4100							
10-digit Emer Satellite #	Emergency_sc	EMER	1	4020	4100							
2233	Priority2_sc	PRI2	2	4008	4100							
PD-Other	Priority2_sc	PRI2	2	4009	4100							
Public Safety	Priority2_sc	PRI2	2	4010	4100							
School Drill	Priority2_sc	PRI2	2	4006	4100							
2131	NonEmergency_sc	NONEMER	4	4007	4101			4101	4101			
Tow	Tow_sc	TOW	3	4011	4104					4104		
TRAINING		TRAINING	1	4012	4110							4110

Call Taker Skill Set Routing

ADMIN PBX CCM Configuration
8/24/2009

Route Name	Application/Script	Skillset	Queue to Skillset Script Priority	CDN	Default DN		CT01 - CT12 and CT25 - CT30	CT13 - CT24 and CT31 - CT36	SD01, SD02, RLF1, RLF2	TOW 1 and TOW2	CT00, FD00, PD00 and OP00	Training
911 Wireline	Emergency_sc	EMER	1	5000	5100		5100				5100	
911 Wireless	Emergency_sc	EMER	1	5001	5100							
911 VOIP	Emergency_sc	EMER	1	5002	5100							
Direct Lines	Emergency_sc	EMER	1	5005	5100							
911 Wireline (NCM Activated)	Emergency_sc	EMER	1	5013	5100							
911 Wireless (NCM Activated)	Emergency_sc	EMER	1	5014	5100							
911 VoIP (NCM Activated)	Emergency_sc	EMER	1	5015	5100							
2233	Priority2_sc	PRI2	2	5008	5100							
PD-Other	Priority2_sc	PRI2	2	5009	5100							
Public Safety	Priority2_sc	PRI2	2	5010	5100							
School Drill	Priority2_sc	PRI2	2	5006	5100							
2131	NonEmergency_sc	NONEMER	4	5007	5101			5101	5101			
Tow	Tow_sc	TOW	3	5011	5104					5104		
TRAINING		TRAINING	1	5012	5110							5110

All the line types indicated by RED will be answered within the EMER skillset -- first in / first out

All the line types indicated by YELLOW will be answered within the PRI2 skillset -- first in / first out

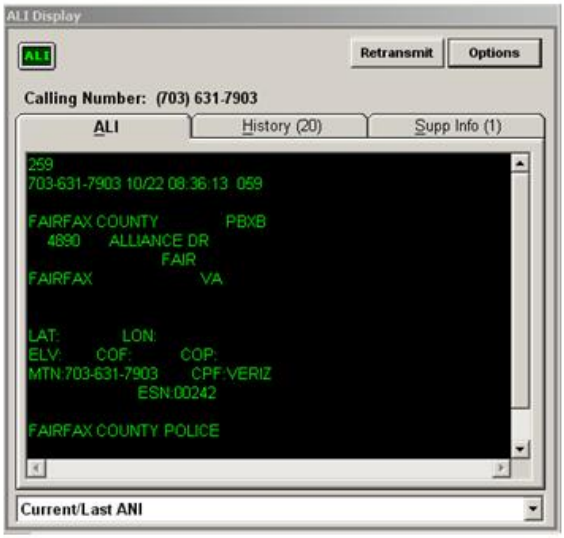
Line type indicated by GREEN will be answered within the NONEMER skillset

Line type indicated by BLUE will be answered within the TOW skillset

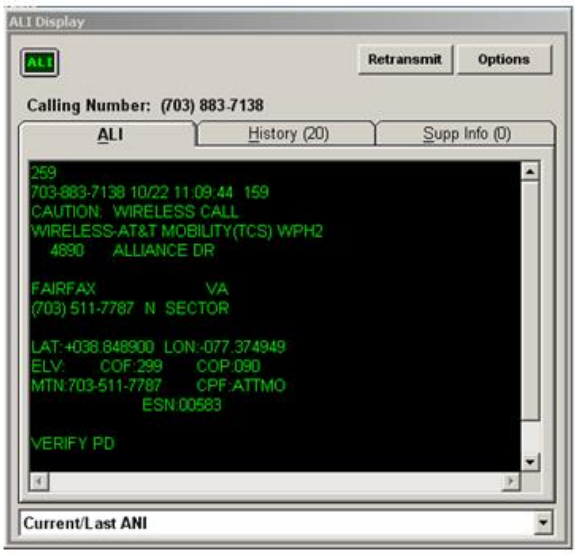
VESTA LOGINS

Those signed in as a "1" will receive any call within the EMER skillset first, then any call within the PRI2 skillset
Those signed in as a "2" will receive any call within the EMER skillset first, then any call withing the PRI2 skillset, then a call within the NONEMER skillset
Those signed in as a "3" will receive calls within the NONEMER skillset
Those signed in as a "4" will receive calls within the EMER skillset first, then any call within the PRI2 skillset, then any call within the TOW skillset, then calls within the NONEMER skillset

Attachment 11 - ANI/ALI Examples



Wireline ALI Example



Wireless ALI Example

Attachment 12 - Recorded Hospital calls at MPSTOC

Overview:
Field EMS personnel who need to telephone a hospital call into a MPSTOC voice mail system, on one of the two access number shown below. The voice mail system offers the caller a list of hospitals to choose from, the caller makes a choice and then the voice mail system uses an analog, loop start phone line, per the table below, to conference the EMS person to the hospital. The conversation on this analog phone number is recorded by MPSTOC's long term recording system. There are two separate voice mail systems, similarly configured, to allow this recording for primary operation and as well as back up operation.

Hospital	Primary access	Back Up Access
FFX HOSP EMS RECORDING	(703) 999-XXXX	(703) 999-XXXX
FAIR OAKS HOSP EMS RECORDING	(703) 999-XXXX	(703) 999-XXXX
RESTON HOSP EMS RECORDING	(703) 999-XXXX	(703) 999-XXXX
MT VERNON HOSP EMS RECORDING	(703) 999-XXXX	(703) 999-XXXX
ACC OF FFX EMS RECORDING	(703) 999-XXXX	(703) 999-XXXX
ALEX HOSP EMS RECORDING	(703) 999-XXXX	(703) 999-XXXX
ARL HOSP EMS RECORDING	(703) 999-XXXX	(703) 999-XXXX
SPRINGFIELD HEALTHPLEX	(703) 999-XXXX	(703) 999-XXXX
Primary Access # 703-999-XXXX		
BUTS Access # 571-999-XXXX		

Attachment 13 - Ring Down Lines (Direct Lines)

Interface	**Analog 2 wire loop start**
Quantity	**88**

PL TO HWY (UTILITY)
PL TO PS02
PL TO ADC
PL TO VA PWR (UTILITY)
PL TO WATER (UTILITY)
PL TO GAS (UTILITY)
PL TO PS03
PL TO PS04
PL TO PS06
PL TO PS07
PL TO JDC
PL TO PS01
PL TO AEOC
PL TO METRO
PL TO PS05
PL TO PS08
PL TO FXP
PL TO ALP
PL TO HP
PL TO VSP ** GOING BETWEEN OLD AND NEW LOCS
PL TO FCHP
PL TO ARP
PL TO ARP
PL TO VP
PL TO HELIPORT
PL to FCHF

Ring Down Lines (Direct Lines)

PL TO ACC FXH
PL TO ACC RH
PL TO ALF
PL TO ARF
PL TO ARF
PL TO FXH
PL TO DEWH
PL TO FIRE TRAINING
PL TO FOH
PL TO FS01
PL TO FS02
PL TO FS03
PL TO FS04
PL TO FS05
PL TO FS08
PL TO FS09
PL TO FS10
PL TO FS10
PL TO FS11
PL TO FS12
PL TO FS13
PL TO FS14
PL TO FS15
PL TO FS16-
PL TO FS17
PL TO FS18
PL TO FS19
PL TO FS20
PL TO FS21
PL TO FS22

Ring Down Lines (Direct Lines)

PL TO FS23
PL TO FS24
PL TO FS25
PL TO FS26
PL TO FS27
PL TO FS28
PL TO FS29
PL TO FS30
PL TO FS31
PL TO FS32
PL TO FS33
PL TO FS34
PL TO FS35
PL TO FS36
PL TO FS37
PL TO FS38
PL TO FS39
PL TO FS40
PL TO FS41
PL TO FS42
PL TO MTVH
PL TO PWF
PL TO RESH
PL to FS41
PL TO SPRINGFIELD HEALTHPLEX
PL TO LORTON HEALTHPLEX
DFCO
FOPS
PL TO DAP (HANGER 5)
PL TO DAF (HANGER 5)

Ring Down Lines (Direct Lines)

PL TO PENTAGON
PL TO MARK CENTER

IT Services Provider CONSULTANT/CONTRACTOR AGREEMENT

Attachment 14 – IT Consultant/Contractor Agreement
IT Services Provider Agreement for Use of IT DIT Revised: April 2013
Fairfax County DEPARTMENT OF INFORMATION TECHNOLOGY

IT Services Provider CONSULTANT/CONTRACTOR AGREEMENT

CONCERNING ACCESS TO AND USE OF INFORMATION SYSTEMS AND COMMUNICATIONS TECHNOLOGY AT FAIRFAX COUNTY, VIRGINIA

I / this firm_____ working as a consultant/contractor/services provider for Fairfax County Government with access to county technology and communications systems, recognize my/our firm's legal and ethical obligation to conduct work on any Fairfax County information or communications system using computer hardware and devices, and/or software (programming languages, operating systems, databases, third party applications software (COTS) and Web based or 'cloud' applications), system utilities, security solutions, monitoring systems, and, data or voice communications software and electronics, Internet capabilities, etc. and county data/content herein referred to as 'technology', in a responsible manner and within the guidelines of the County's IT Security Policy and/or firm's contract. My/our purpose in using computer based technology is to perform work for the Fairfax County Department of Information Technology (DIT) in support of Fairfax County Government, and therefore we are subject to the standards, IT Security and Privacy policies, and ethics and behavior policies of Fairfax County Government. As a condition for and in consideration of being given access to the computer systems, data, the network, internet, and, Fairfax County computer center(s), IT galleries, server rooms, network core facilities, third party hosting centers, and 'clouds' where county services are provided, I/we agree that:

I/our firm possess the professional credentials that I or my firm has represented in being hired to perform my/our duty and assignments, and that I/our firm representatives have successfully passed a certifiable criminal background check.

I/our firm will not use Fairfax County technology systems to access any information available or acquired from the technology systems for any reason except for purposes directly related to our job assignments and responsibilities as defined by my/my firm's contract and assignment with the County. I/we will not use Fairfax County technology systems to disclose any information available or acquired from Fairfax County systems for any reason except for purposes directly related to my/my firm's contract and job assignments and responsibilities for such use as defined by DIT. I/we understand that any work I/we perform for Fairfax County that develops systems, logic, or data is the property of Fairfax County, and I/we cannot take or send such products without express permission of appropriate Fairfax County authority. I/we understand that a user agency may ask me/ my firm to sign a separate agreement relating to the privacy and security of the information that a user agency administers, such as for HIPAA or other Data Privacy/Cyber Security laws.

I/ our firm will use vendor provided software and/or utilities only in accordance with such provisions as may have been agreed to between such vendor and Fairfax County. I/we will not deliberately violate any copyright laws or agreements states or implied in my/our use of the software. I/we recognize that to do so makes me/my company liable for any applicable penalties and may lead to my/our firm's immediate dismissal from the County's engagement.

I/our firm further understands that the deliberate misuse of Fairfax County technology, data, and/or software, which results in the change, damage or destruction of County systems, programs, and/or data is considered destruction of County property and may be considered a breach of contract and/or a criminal offense. I/we understand that our firm may be liable and may be liable to include immediate release from the engagement for breach of the Fairfax County IT Security Policy, and possible prosecution for the actions of my/this firms actions in the destruction of County property. I/we further understand and recognize that there are criminal penalties for misusing government information and for the improper use of government information.

I/we have completely read and fully understand the terms of this agreement and accept these terms.

_____
Name of Firm

_____ _____
Consultant/Representative Signature Date

_____ _____
Firm Authorized Representative Date

I accept this agreement on behalf of Fairfax County, Virginia.

_____ _____
ISO Date